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WELLINGTON GAS-FIRED PEAKING POWER STATION

ENVIRONMENTAL ASSESSMENT

SEPTEMBER 2008

SUBMISSIONS REPORT

PB 100 YEARS®

Wellington Gas-fired Peaking Power Station Project

Submissions Report

September, 2008

ERM Power

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Glossary of acronyms

Acronym	Explanation
AHIMS	Aboriginal Heritage Inventory Management System
AMBS	Australian Museum Business Services (undertook the Aboriginal and historic heritage assessment)
BOM	Bureau of Meteorology
CEMP	Construction Environmental Management Plan
CO	Carbon monoxide
dB	Decibels
DoP	NSW Department of Planning
DEC	The former NSW Department of Environment and Conservation (now DECC)
DECC	NSW Department of Environment and Climate Change
DGRs	Director-General's Environmental Assessment requirements
DPI Fisheries	NSW Department of Primary Industries (Fisheries Ecosystems Branch)
DPI Minerals	NSW Department of Primary Industries (Mineral Resources NSW)
DWE	NSW Department of Water and Energy
EA	Environmental Assessment
EEC	Endangered ecological community
EIA	Environmental impact assessment
EPA	Environmental Protection Authority (under the DECC)
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
EP&A Act	*Environmental Planning and Assessment Act 1974*
ERM Power	The proponent
FM Act	*Fisheries Management Act 1994*
GAC	Gallanggabang Aboriginal Corporation
GLC	Ground level concentration
GPS	Global positioning system
LALC	Local Aboriginal Land Council
M/S	Metres/Second
ML	Megalitre
MW	Megawatt
NEMMCO	National Electricity Market Management Company
NEPC	National Environmental Protection Council
NGO	Non-Government organisation
NO_x	Nitrous oxides
NO_2	Nitrogen dioxide
NSW INP	*NSW Industrial Noise Policy*
OEMP	Operation Environmental Management Plan

Acronym	Explanation
O_3	Ozone
PB	Parsons Brinckerhoff Australia Pty Limited
PHA	Preliminary hazard analysis
$PM_{2.5}$	Particulate matter less than or equal to 2.5 µm in aerodynamic diameter
PM_{10}	Particulate matter less than or equal to 10 µm in aerodynamic diameter
POEO Act	*Protection of the Environment Operations Act 1997*
SMH	Sydney Morning Herald
SO_2	Sulphur dioxide
SoCs	Statement of Commitments
SOHI	Statement of Heritage Impact (NSW Heritage Office guideline)
TSC Act	*Threatened Species Conservation Act 1995*
WDI	Wellington Development Inc

1. Introduction and background

1.1 Purpose of this report

The proposed Wellington Gas-fired Peaking Power Station ('the proposed power station') comprises four open-cycle gas-fired turbines with a total capacity of approximately 600 megawatts (MW). The power station would operate as a peaking plant and would be located near Wellington in Central New South Wales (NSW). The proposed power station site comprises approximately 45 hectares of land, with an operational footprint of approximately 6 hectares and the remaining land to be used as a buffer zone.

The proposed power station would operate on natural gas. This gas would be supplied via a new 100-kilometre long underground gas pipeline connecting the proposed power station to the existing Central West Gas Pipeline near Alectown. A compressor station would be constructed to connect the new gas pipeline with the Central West Gas Pipeline and safely provide the proposed power station with natural gas. The gas pipeline would have a construction footprint approximately 25–30 metres wide (which would be narrowed through areas of environmental sensitivity) and would require an operational easement 20-25 metres wide. The power station, gas pipeline and compressor station are collectively referred to, hereafter, as 'the project'.

The project is being assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). On 26 February 2008 the NSW Government declared the project as critical infrastructure under Part 3A of the Act.

In accordance with the requirements of the Act, an Environmental Assessment was prepared and placed on public exhibition from 21 May 2008 to 23 June 2008. During this period, submissions were invited from anyone with an interest in the project. At the close of the public exhibition period, the DoP provided ERM Power with copies of the 60 submissions received.

Under Section 75H(6) of the EP&A Act, ERM Power is now required to prepare and submit a formal response to the received submissions together with a revised Statement of Commitments (SoC) to reflect any changes to the proposed project arising from the submissions. This Submissions Report documents and considers the submissions received on the Environmental Assessment, and outlines ERM Power's responses to these submissions.

Following consideration of the submissions, no significant changes to the design described in the Environmental Assessment are proposed. ERM Power, therefore, considers that preparation of a Preferred Project Report is not necessary.

1.2 Project information

A project information line (1800 445 546) was established and maintained throughout the environmental assessment process. A new 24-hour, toll-free complaints and community information telephone number, and a new project email address, will be established for the project and will be advertised prior to the commencement of construction activities. These will be maintained throughout the construction phase of the project.

The Environmental Assessment display period and the DoP's formal submissions period have both closed. Nonetheless, ERM Power will continue to respond to other correspondence with regard to any ongoing project issues.

1.3 Structure of this report

This report comprises the following chapters:

- *Chapter 1 Introduction and background* — outlines the purpose and structure of this report, and provides project information.
- *Chapter 2 Consultation* — provides an overview of the consultation and public display activities undertaken during and following the Environmental Assessment exhibition period.
- *Chapter 3 Approach to consideration of submissions* — reviews the submissions received during and following the exhibition period, and outlines ERM Power's responses to the issues raised.
- *Chapter 4 Responses to issues raised in submissions* — details the issues that were raised in the submissions and provides responses to each.
- *Chapter 5 Additional investigations* — summarises the additional investigations undertaken since the Environmental Assessment was finalised, including investigations in response to submissions received.
- *Chapter 6 Environmental Assessment clarifications* — provides corrections and clarifications to the Environmental Assessment.
- *Chapter 7 Conclusions and next steps* — provides overall conclusions and outlines the process from here.
- *Chapter 8 References* — lists all the documents referenced within this report.

The following Appendices are provided to the report:

- *Appendix A* — Minutes from meeting with the DECC on 16 July 2008
- *Appendix B* — Revised Statement of Commitments
- *Appendix C* — Table of submissions and issues
- *Appendix D* — Noise wall investigations
- *Appendix E* — Hydrogeological investigations
- *Appendix F* — Extent of the grid used in the air modelling for the power station
- *Appendix G* — Wellington Council letter re: power station water supply, dated 9 September 2008
- *Appendix H* — Goobang National Park *Gazette* notice.

2. Consultation

2.1 Consultation during the exhibition period

The Environmental Assessment for the project was publicly exhibited from Wednesday 21 May 2008 to Monday 23 June 2008. During this period, a range of exhibition activities and consultations were undertaken.

2.1.1 Exhibition venues

The Environmental Assessment was publicly displayed at the six locations listed in Table 2-1.

Table 2-1 Exhibition locations of the Environment Assessment

Location	Address
Department of Planning	23–33 Bridge Street, Sydney NSW 2000
Wellington Council	Nanima Crescent, Wellington NSW 2820
Parkes Shire Council	2 Cecile Street, Parkes NSW 2870
Cabonne Council	101 Bank Street, Molong NSW 2866
Wellington Library	Percy Street, Wellington NSW 2820
Nature Conservation Council	Level 2, 301 Kent Street, Sydney NSW 2000

Public exhibition of the Environmental Assessment at the councils and Wellington library, were accompanied by a summary document and displays that:

- identified the site of the proposed power station and gas pipeline
- explained the need and benefits of the project
- summarised the key findings of the environmental studies such as noise, air quality, biodiversity, heritage and visual.

2.1.2 1800 project information line, project email and website

The 1800 project information line and project email address were monitored throughout the exhibition period. Less than five calls and emails were received during this period.

The Environmental Assessment was also available on the NSW Department of Planning and ERM Power websites.

2.1.3 Advertisements

Both the DoP and ERM Power advertised the public exhibition of the Environmental Assessment for the project.

Advertisements placed by the DoP appeared in the following papers:

- *The Wellington Times*
- *The Orange Central Western*

- *The Dubbo Daily Liberal*.

ERM Power advertised the exhibition of the Environmental Assessment in *The Wellington Times* on Wednesday 21 May 2008.

On Monday 19 May 2008, an article about the completion of the Environmental Assessment, and information about the public exhibition period featured on the front page of *The Wellington Times*.

2.1.4 Community newsletter — planning update

In May 2008, 3,000 copies of the third project newsletter were distributed to Wellington residents, including landowners potentially affected by the proposed gas pipeline and key stakeholders recorded on the project database.

The newsletter provided a planning update, which included the following information:

- a brief project overview
- announcement that the Environmental Assessment was complete
- key findings of the Environmental Assessment
- dates of the public exhibition, locations to view the document and the address to which submissions could be sent
- dates and location of the public open days.

2.1.5 Letters to affected landowners

Letters and the planning update newsletter (see Section 2.1.4) were sent on 15 May 2008 to all landowners potentially affected by the gas pipeline. The letter gave a brief project overview, announced the completion of the Environmental Assessment, and provided information on the dates and venues for the public exhibition and community information sessions. The letter ensured the recipients that, as landowners potentially affected by this project, they would be kept informed about the project, the planning process and community consultation activities.

2.1.6 Letters to stakeholders

Letters and the planning update newsletter (see Section 2.1.4) were sent to the following stakeholders on 15 May 2008:

- Gallanggabang Aboriginal Corporation (GAC)
- Cabonne Council
- DoP
- NSW Department of Environment and Climate Change (DECC)
- Orana Aboriginal Corporation
- Parkes Shire Council
- Peak Hill Local Aboriginal Land Council (LALC)

- The Wellington Times
- Upper Bogan River Wirradjurie Corporation
- Wellington Council
- Wellington Development Incorporation
- Wellington LALC.

The letter gave a brief project overview, announced the completion of the Environmental Assessment, and provided information on the dates and venues for the public exhibition and community information sessions.

2.1.7 Community information sessions

Two community information sessions were held during the public exhibition of the Environmental Assessment. These occurred on 23 and 24 May 2008 at the Wellington Civic Centre, 21 Swift Street. The sessions were advertised in the planning update newsletter, advertisements in *The Wellington Times* and on ERM Power's website. The two information sessions were attended by approximately 100 interested persons, including two classes from the local St Mary's Central school.

The community information sessions enabled members of the public to discuss the project with the project team and to view project material. Information about the technical studies undertaken during the assessment, including key findings, was provided to the community. The information sessions also allowed the project team to discuss community issues, and concerns prior to formal submissions. Project material provided at all the sessions included:

- project description
- project need and benefits
- copies of the Environmental Assessment
- aerial maps with the proposed gas pipeline alignment
- air quality, visual, noise, biodiversity and heritage assessment results
- submission forms.

Summaries of the Environmental Assessment and copies of the third newsletter were also available for attendees to take away.

The following general issues were raised during the information sessions:

- employment opportunities during construction and operation
- potential devaluation of property
- air quality impacts
- visual impacts
- night lighting affecting nearby properties
- consultation
- business impacts (e.g. agriculture, ecotourism, café)

- access to land for farming activities during construction of the gas pipeline
- health concerns (e.g. cancer, farming near power station, chemicals infiltrating town water supply)
- heritage survey methodology.

These have been addressed in the responses to submissions.

2.1.8 Visit to Oakey Power Station

During preparation of the Environmental Assessment, a site visit to the Oakey Power Station in Queensland was undertaken to assist members of the community to understand the nature of the project. ERM Power flew a delegation of local representatives to the power station, including one of the nearby neighbours, the President of the Wellington Development Incorporated (WDI), the Editor of *The Wellington Times*, the local member Mr Russell Turner MP, and the Mayor and General Manager of Wellington Council. The local media was invited to report openly and frankly on the site visit and the opinions of the delegation. The site visit was reported in *The Wellington Times* shortly after and reflected positively on the operation (and noise level) of the operating gas-fired turbines.

2.1.9 Management of submissions

All submissions received by the DoP during the exhibition of the Environmental Assessment were provided with a submission number and the date received was noted. These submissions were then forwarded to ERM Power, who prepared a database to extract and list all the issues raised.

All information obtained during the consultation process was used in accordance with the *Privacy Act 1988*.

2.2 Consultation following the exhibition period

2.2.1 1800 project information line and project email

The 1800 project information line and project email address were maintained during preparation of the Submissions Report, and will be maintained and regularly checked until the Minister for Planning's decision is made on the project.

If the project is approved, a new 24-hour, toll-free complaints and community information telephone number, and a new project email address, will be established and will be advertised prior to the commencement of pre-construction activities. These will be maintained throughout the construction phase of the project.

2.2.2 Meetings

A number of meetings and liaisons were undertaken with government agencies and key stakeholders to further discuss and resolve some of the issues raised in the submissions.

On 16 July 2008, a meeting was held with the DECC to discuss the issues raised in its submission relating to biodiversity and Aboriginal heritage. The minutes to this meeting are provided in Appendix A.

This meeting, and the actions that arose from it, resulted in the DECC reconsidering some of the issues raised in its submissions, particularly as they related to the:

- biodiversity survey methodology
- biodiversity offset strategy
- construction corridor width through native vegetation
- Aboriginal heritage survey methodology
- level of Aboriginal heritage consultation undertaken.

Following on from this meeting, further correspondence was received from the DECC regarding the flora survey undertaken and vegetation mapping produced for the biodiversity assessment. These issues raised have been addressed in Sections 4.14.2, 4.15.1 and 4.25.

Further consultation has been undertaken with Wellington Council to discuss an issue raised regarding the security of the water supply for the project. The outcomes of these discussions are reflected in Section 4.22.3 and in the revised Statement of Commitments in Appendix B.

Consultation has been undertaken with TransGrid to discuss the technical, planning and environmental issues associated with the development of transmission lines that would be required if the power station was developed at an alternative location. The outcomes of these discussions are reflected in Section 4.8.5.

On 15 September 2008, a meeting was held the DoP (Scott Jeffries, Director, Major Infrastructure Assessments) and the DECC (Larry Clark, Noise specialist) to:

- discuss noise issues relating to Nanima House from operation of the proposed power station
- discuss the options investigated at the source, along the transmission path and at the receiver to minimise and manage this noise
- clarify the strategic layout for discussion of these issues in the Submissions Report.

The outcomes of these discussions are reflected in Section 4.23 and in the revised Statement of Commitments in Appendix B.

ERM Power has continued to consult with a number of landowners directly affected by the proposed power station, to further discuss the nature of potential impacts and possible solutions. The outcomes of these discussions are reflected in Chapter 4 and in the revised Statement of Commitments in Appendix B.

3. Approach to consideration of submissions

The NSW Department of Planning (DoP) received a total of 60 submissions, which were forwarded to ERM Power for consideration and response. Table 3-1 provides a list of the submissions received. Of these submissions, 54 were from individuals or local residents (38 of which were from students at the local St Mary's Central School), one was a petition signed by 48 local residents, four were from government agencies and one was from a non-government organisation.

Each submission was reviewed individually and the issues from each were extracted. A summary of all submissions received, including a reference tracking where each issue is addressed within this report, is provided in Appendix C.

Table 3-1 Submissions received

Submission number	Respondent
1	Individual submission
2	Individual submission (repeat of Submission 1)
3	Individual submission (repeat of Submission 1)
4	Individual submission
5	Individual submission
6	Individual submission
7	Individual submission
8A	NSW Department of Primary Industries (Fisheries Ecosystems Branch) (DPI Fisheries)
8B	NSW Department of Primary Industries (Mineral Resources) (DPI Minerals)
9	Individual submission
10	Individual submission
11	Individual submission
12	Gallanggabang Aboriginal Corporation
13	Individual submission
14	Individual submission (student)
15	Individual submission (student)
16	Individual submission (student)
17	Individual submission (student)
18	Individual submission (student)
19	Individual submission (student)
20	Individual submission (student)
21	Individual submission (student)
22	Individual submission (student)
23	Individual submission (student)
24	Individual submission (student)

Submission number	Respondent
25	Individual submission (student)
26	Individual submission (student)
27	Individual submission (student)
28	Individual submission (student)
29	Individual submission (student)
30	Individual submission (student)
31	Individual submission (student)
32	Individual submission (student)
33	Individual submission (student)
34	Individual submission (student)
35	Individual submission (student)
36	Individual submission (student)
37	Individual submission (student)
38	Individual submission (student)
39	Individual submission (student)
40	Individual submission (student)
41	Individual submission (student)
42	Individual submission (student)
43	Individual submission (student)
44	Individual submission (student)
45	Individual submission (student)
46	Individual submission (student)
47	Individual submission (student)
48	Individual submission (student)
49	Individual submission (student)
50	Individual submission (student)
51	Individual submission
52	Individual submission
53	Individual submission
54	Individual submission
55	Petition (48 signatures)
56	Individual submission (student)
57	Individual submission
58	DWE
59	DECC
60	Individual submission

4. Responses to issues raised in submissions

In accordance with Section 75H of the *Environmental Planning and Assessment Act 1979* (EP&A Act), this Chapter provides responses to the submissions received regarding the Environmental Assessment for the Wellington Gas-fired Peaking Power Station project.

Due to the number of submissions and the similarity of issues raised in various submissions it was determined that responses would not be given to individual submissions but to the various issues raised. Where submissions raised the same or similar issues, a consolidated response that encapsulated each of these was prepared.

Consideration of each issue was undertaken by ERM Power and a written response provided. Issues were generally categorised according to the relevant chapter or section of the Environmental Assessment.

4.1 Objection to the project

Issue description

- Object to the proposal.
- No-one in the local area wants this power station because of the noise, visual and emission pollution it will create.
- Disagree with the power station/gas line.
- Disagree for environmental reasons.
- I would hate to see this power plant come to our beautiful, healthy town.
- The proposed power station should not go ahead until all community concerns are addressed.

  Submission No. 6, 7, 11,18, 19, 21, 22, 25, 26, 27, 29, 30, 31, 36, 38, 40, 41, 44, 45, 47, 50, 51, 52, 53, 60

Response

Noted.

The community concerns raised in these submissions have been addressed in this report.

4.2 Environmental Assessment process

4.2.1 Adequacy review

(a) Issue description

- The NSW Department of Water and Energy (DWE) was recently made aware that the EA was issued to the energy section of DWE for adequacy assessment; however, the water section was not provided the opportunity due to confusion following the creation of DWE.

  Submission No. 58

Response

It is noted that the Water section of the DWE was unable to provide comment during the adequacy review (led by the DoP) of the Environmental Assessment. Their comments received during public exhibition are appreciated and have been addressed in this report.

(b) Issue description

- The NSW Department of Environment and Climate Change (DECC's) concerns regarding the adequacy of the EA have generally not been addressed. Notwithstanding these concerns, the DECC has determined that it is able to support the proposal subject to the DoP amending the draft Statement of Commitments (SoCs).

  Submission No. 59

Response

It is noted that the DECC adequacy review comments were provided to the DoP after the DoP had signed-off on the adequacy of the Environmental Assessment. As such, the DoP provided these comments to ERM Power for its information, but informed that the comments did not change the DoP's position on the Environmental Assessment's adequacy.

Prior to exhibiting the Environmental Assessment, the adequacy review comments received from the DECC were considered by ERM Power and the technical specialists who undertook the assessments. ERM Power considered that the comments raised by the DECC could be addressed through the Submissions Report. Since the DECC provided comments during public exhibition of the Environmental Assessment, these comments have been formally addressed.

Following receipt of the DECC submission, a meeting was held between ERM Power and the DECC to discuss the issues raised in relation to biodiversity and Aboriginal heritage. The minutes from this meeting are provided in Appendix A. The actions and outcomes of this meeting are reflected in Sections 4.14.2, 4.15.1 and 4.25, the latter where the amendments to the SoCs requested by the DECC have been addressed.

4.2.2 Review of Director-General's report

Issue description

- It is expected that the DECC will be given opportunity to review the draft Director-General's EA report for this proposal. If the amendments to the draft SoC are not included to the satisfaction of the DECC, the DECC will be recommending that they are included as Conditions of Approval, if approval is recommended by the DoP. It is noted that the amendment, particularly in relation to noise, air quality, Aboriginal cultural heritage and biodiversity, are important for the DECC's ongoing support for the proposal.

  Submission No. 59

Response

It is noted that this comment is directed to the DoP. Nonetheless, ERM Power acknowledges the issues raised regarding the DECC's requested amendments to the SoCs, and these need for these to be undertaken in order for the DECC to support the project. These issues have been addressed in Section 4.25.

4.2.3 Preferred Project Report

Issue description

- The EA report must be amended to incorporate all of the issues raised in the Gallanggabang Aboriginal Corporation (GAC) submission, and re-notified so that further public submissions may be made.
- A Preferred Project Report should be prepared outlining any proposed changes to the project to minimise its impact (including details of the final route of the pipeline). This report should be made available to the public.

  Submission No. 12

Response

In accordance with Part 3A of the EP&A Act, all issues raised in the submissions for the project have been addressed in this Submissions Report. The sections in which those issues raised by GAC have been addressed are listed in Appendix C. The Submissions Report includes clarifications/corrections to the Environmental Assessment that have been identified through submissions (see Chapter 6). Additional investigations have been undertaken in response to some issues raised relating to the feasibility of a noise wall at Nanima House and the potential to establish an on-site bore to supply the power station with water during operation. These investigations are provided in Appendix D and Appendix E respectively, and are addressed in Sections 4.23 and 4.22.3. The minor nature of these investigations is such that a Preferred Project Report is not considered necessary. The Submissions Report also includes a revised set of SoCs, which includes some amended SoCs and some new SoCs to address issues raised.

A Preferred Project Report is not required for the gas pipeline route. Figures 7-6 to 7-9 of the Environmental Assessment show the proposed pipeline route. Chapter 7 of the Environmental Assessment explains that, during detailed design, the final pipeline route would be determined in consultation with affected landowners and relevant authorities

(e.g. Councils, DWE, DECC and ARTC). Any proposal to deviate the pipeline route beyond the 200-metre wide buffer zone surveyed for the Environmental Assessment would be subject to further environmental investigations.

As per the Part 3A environmental assessment process, this Submissions Report will be submitted to the Director-General of the DoP for consideration. This statutory process does not provide for the public to submit further comment on the Submissions Report. The DoP will make the Director-General's Environmental Assessment Report available on its website.

4.3 Consultation

4.3.1 Consultation process

(a) Issue description

- The consultation process is relatively ineffective…perhaps even obstructive.
- Neither PB or ERM visited Glenbrae as part of the consultation process.

Submission No. 7, 60

Response

ERM Power believes the consultation activities undertaken throughout the environmental assessment process were very comprehensive, and provided the community with detailed information about the project, including its benefits and potential impacts, an understanding of the environmental assessment process, and provided current updates of project progress.

The communication process was structured to meet the needs of the general community, key stakeholders and landowners potentially affected by the project. Consultation activities included an initial community consultation phase, the distribution of three newsletters, multiple media releases and advertisements in the local paper, a site visit for local representatives to a power station in Queensland, and two community information sessions during exhibition of the Environmental Assessment. Directly-affected landowners at the proposed power station site and along the pipeline route were personally consulted.

The site visit to the power station in Queensland (Oakey Power Station) was undertaken to assist members of the community to understand the nature of the project. ERM Power flew a delegation of local representatives to the power station, including one of the nearby neighbours, the President of the Wellington Development Incorporated (WDI), the Editor of *The Wellington Times*, the local member Mr Russell Turner MP, and the Mayor and General Manager of Wellington Council. The local media was invited to report openly and frankly on the site visit and the opinions of the delegation. The site visit was reported in *The Wellington Times* shortly after and reflected positively on the operation (and noise level) of the operating gas-fired turbines.

The findings of the technical assessments for the project indicated that the Glenbrae property (at Cadonia Estate) would not be significantly impacted by the proposed power station (predicted noise levels and air emissions would be below the regulated limits, and visual impacts are expected to be minimal). As such, no direct consultation was considered necessary at this property.

Relevant stakeholders were also consulted during the preparation of the Environmental Assessment to discuss the project. Of particular relevance, a number of meetings (at least three) were held with the WDI during the process. It is noted that the owner of Glenbrae is a member of the WDI and attended most of these meetings.

(b) Issue description

- All of my students did not receive pamphlets in their mailboxes as ERM power claimed.

  Submission No. 7

Response

Distribution of the third newsletter, just prior to public exhibition of the Environmental Assessment, was undertaken by local Wellington pamphlet-distributers whose details were provided to ERM Power by Wellington Council. The third newsletter was distributed to all Wellington residents recorded on Wellington Council's database.

The concern that newsletters were not received was also raised by some students during the community information sessions on 23 and 24 May 2008. However, other students indicated that they had received the newsletter. It was also noted by some that the newsletter arrived bundled in the middle of junk mail. This may explain why some residents believe they did not receive the newsletter, as they may have discarded the junk mail without looking at its contents. Additional copies of the subject newsletter were made available at the information days.

(c) Issue description

- The 2 days between the day the EA report was posted online and the Wellington open day sessions was unfair. Most people hadn't managed to download and read the report, let alone formulate questions. The consultation period could have been extended to 5 or 6 weeks rather than the minimum 30 days they have chosen to allow us. That way, the open day sessions could have been run a week or 2 after the report went online.

  Submission No. 60

Response

ERM Power has no control over the duration of the public exhibition period or the time allowed for the public to submit comments, as public exhibition of the Environmental Assessment is managed by the DoP pursuant to Part 3A of the EP&A Act, which dictates a statutory minimum 30-day exhibition period.

Under Part 3A of the EP&A Act, there is no statutory requirement for a proponent to hold community information sessions during the public exhibition of an Environmental Assessment. However, ERM Power recognises the importance and value of holding community information sessions, and believes the two sessions held during the assessment process were appropriately timed.

(d) Issue description

- Following the open days contact to the project phone went straight to voicemail and the email address didn't work. No replies were received to concerns raised at open sessions. PB directed me to ERM to answer my questions.

  Submission No. 60

Response

Throughout the environmental assessment process (including preparation of the Submissions Report), the project phone number was checked on a daily basis. Any messages left by the community were promptly followed up by the personnel most equipped to do so.

Following the community information sessions, some technical difficulties were experienced with the project email address. These difficulties were identified by the submitter, who is thanked for bringing this to ERM Power's attention. While the technical issues were being resolved, the submitter was asked to send the email directly to one of PB's EIA personnel.

As discussed in Section 4.3.2 below, ERM Power believes that the Environmental Assessment adequately presented all the information required to assess the potential impacts of the project. Further, ERM Power believes the Environmental Assessment successfully achieved the balance between a document that could be read and followed by the general public, and a document that contained the technical information necessary for the relevant agencies and authorities to determine the adequacy of the assessments.

ERM Power believes the nature of the enquiries placed unreasonable demand for scientific information, given the comprehensive information that was provided in the Environmental Assessment. As such, the respondent was referred to ERM Power to address the questions. ERM Power answered the questions as well as could have been expected, given the scope of the enquiries, and provided supplementary information where available.

4.3.2 Information provided during consultation and public exhibition

(a) Issue description

- ERM failed to be able to answer questions.
- Did not receive help understanding the significance of scientific data.
- Difficulty in obtaining relevant information.
- The community consultation representatives during the consultation at Wellington could not answer detailed questions, so how are we expected to be able to understand?
- The EA was full of jargon.
- The EA makes little effort to present vital information in a way that an average, concerned person can understand.

  Submission No. 3, 7, 48, 60

Response

ERM Power disagrees with these submissions.

In January 2007, the Director-General issued the Environmental Assessment requirements (DGRs) for the project. These DGRs identified the key issues that needed to be considered in the Environmental Assessment. The Environmental Assessment was then prepared in accordance with these DGRs. Upon completion, an adequacy review of the Environmental Assessment was undertaken by the DoP to determine whether it adequately addressed the DGRs issued for the project. In a letter dated 8 April 2008, the DoP advised that 'pursuant to Section 75H of the *Environmental Planning and Assessment Act 1979*, you are advised that the Environmental Assessment adequately addresses the Director-General's environmental assessment requirements, as issued on 31 January 2008'. In other words, the DoP considered that the Environmental Assessment provided the necessary information to understand the project, and comprehensively assess the potential impacts of its construction and operation.

It is acknowledged that the Environmental Assessment included some detailed technical information, particularly as it related to the noise and air quality impact assessments. This level of assessment was required to comprehensively investigate the potential impacts of the project, in accordance with the requirements of the DGRs, and to provide the results in a manner consistent and comparable with the guidelines stipulated therein.

ERM Power believes the representatives available to answer questions at the community information sessions provided information in a transparent and honest manner, and to the best of their ability.

ERM Power sought to make the main body of the Environmental Assessment as accessible and understandable to the general public as possible. The technical assessments provided in Volume 2 were summarised in the main body to present the key findings and proposed mitigation measures. Cross-references to the technical papers were used wherever possible to avoid the inclusion of overly-technical information in the main body.

The Environmental Assessment also provided a "Glossary and abbreviations" table at the front of the document, which explained the technical terms and acronyms used in the document.

ERM Power believes that the Environmental Assessment successfully achieved the balance between a document that could be read and followed by the general public, and a document that contained the technical information necessary for the relevant agencies and authorities to assess the adequacy of the assessments.

(b) Issue description

- The information provided during the information session was often presented in a way that could make no sense to us. The poster described the impacts on air quality using scientific terms, which were just letters and numbers to us.
- Representatives are expected to promote the positives of the project, so may see providing information about the potential negative effects as a conflict of interest; perhaps they fear the information could be used to oppose the power station.

- The information provided during the information session hardly described the impacts, but splashed all the so-called 'benefits'.

  Submission No. 48, 60

Response

ERM Power disagrees with these submissions.

The three posters used at the community information sessions sought to provide a summary of all aspects of the project. They provided a description/overview of the project, the benefits of the project to the local community and NSW generally, the key results of the environmental assessments (i.e. noise, air, visual, biodiversity and Aboriginal heritage) and mitigation measures to minimise environmental impacts. This information was also provided in a Summary booklet, which was available for the community to take with them.

The key results did not only provide the positive results, but also included information about the predicted environmental impacts of the project (e.g. noise and biodiversity impacts).

The predicted noise emissions from the power station were visually presented so the public could see how the noise would disperse from the site. A chart was provided on the poster and on a separate information sheet that related noise levels (in decibels) to every day noise sources (e.g. living room, business office, average street traffic), enabling the public to relate the noise levels to real life conditions.

With respect to predicted air quality emissions, this information was summarised into a simple table. This table compared the predicted emissions from the power station with the emission limits set by regulators. ERM Power considers that this provided an appropriate reference/comparison for the community.

4.3.3 Community issues raised

Issue description

- Under consultation requirements, the Director-General requires that the EA must clearly indicate issues raised by stakeholders during consultation, and how those matters have been addressed in the EA. The GAC considers that the EA report has not sufficiently addressed GAC's issues raised concerning the Aboriginal Heritage survey and assessment process.

  Submission No. 12

Response

Chapter 3 of Technical Paper 4 (Heritage assessment) discusses the Aboriginal consultation undertaken as part of the assessment. Regarding the survey methodology, this section states the following:

> Prior to undertaking field survey with Gallanggabang Aboriginal Corporation, an informal meeting was held with representatives of the Corporation, including elders Joyce Williams and Violet Carr. During this meeting, the proposed development, route and assessment methodology was outlined and discussed in detail to ensure that the representatives understood and agreed with the proposed assessment methodology.

AMBS has advised that representatives of the GAC initially expressed concern that the route would pass near culturally sensitive areas. However, following meetings with the Elders of the organisation, AMBS was able to confirm that the culturally sensitive areas were in fact located 30–50 kilometres north of the pipeline route, and that no such culturally significant areas would be impacted. As such, ERM Power believes the report does sufficiently address GAC's issues raised, as the issue was resolved prior to conducting the survey.

Following completion of the Aboriginal heritage survey, GAC provided a letter indicating that GAC believed the survey work performed by AMBS was very good. The letter did request, however, that, once the final pipeline route was pegged, representatives of GAC be driven along this route for a final inspection. ERM Power agreed to this request, which is reflected in the mitigation measures (see Section 9.6.4 of the Environmental Assessment) and committed to in the draft Statement of Commitments (SoCs) (see draft SoC AH4 in Table 11-1 of the Environmental Assessment), and maintained in the revised SoCs (see Appendix B).

ERM Power believes that the Environmental Assessment has sufficiently addressed the GAC's issues raised concerning the Aboriginal heritage survey and assessment process.

4.3.4 Ongoing consultation

Issue description

- The proponent must be required to consult with the GAC and the community generally.

  Submission No. 12

Response

ERM Power agrees that ongoing consultation with the community is very important. ERM Power has committed to ongoing community and stakeholder consultation throughout construction and operation of the project (draft SoCs C1–C7). This consultation would be implemented through a Community and Stakeholder Involvement Plan. This commitment has been maintained in the final SoCs (see Appendix B).

ERM Power has also committed to ongoing consultation specifically with Aboriginal stakeholders. This issue is addressed further in Section 4.15.1.

4.4 Planning and statutory context

4.4.1 Licensing requirements

(a) Issue description

- The EA indicates the intention of the proponent to obtain a licence under the *Pipelines Act 1967* for the 100 kilometre gas pipeline associated with the project. DWE would wish to see this intent become a Condition of Consent for the overall power station and associated pipeline project.

  Submission No. 58

Response

Noted and agreed.

Draft SoC P1 commits ERM Power to seek a licence to construct the pipeline under the *Pipelines Act 1967*. This commitment has been maintained in the final SoCs (see Appendix B).

(b) Issue description

- The DECC notes that the proposal has an intended capacity to produce in excess of 30 megawatts (MW) and will, therefore, require an environmental protection licence pursuant to the *Protection of the Environment Operations Act 1997* to operate. The proponent will need to make a separate application to the DECC to obtain this licence once development approval is granted.

  Submission No. 59

Response

Noted and agreed.

Section 7.4.1 of the Environmental Assessment states that "ERM Power would apply to the Department of Environment and Climate Change for an Environmental Protection Licence for the facility following the completion of commissioning activities and prior to the commencement of operations".

The final SoCs have been revised to include this as a commitment (see Appendix B).

4.4.2 CEMP and OEMP

(a) Issue description

- The DECC recommends that the Construction Environmental Management Plan (CEMP) addresses (but should not be limited to) spill management, stormwater and erosion and sediment control, dust management, the minimisation of impacts to flora and fauna, and management of Aboriginal objects.

  Submission No. 59

Response

Noted and agreed.

ERM Power has committed to addressing the issues raised by the DECC in its draft SoCs (M1–M3, N1, A1, G1, B3, T1, SW1 and W1). Regarding management of Aboriginal objects, the draft SoCs include commitments to protect known items/sites and any identified during construction. The SoCs have been revised to include a commitment specifically relating to this being addressed through the CEMP (see Appendix B).

(b) Issue description

- The DECC recommends that the Operational Environmental Management Plan (OEMP) addresses (but is not limited to) both the ongoing monitoring requirements and the management actions identified applicable to the CEMP. Further, the management requirements for clean and dirty (contaminated) water, waste, weeds, flora and fauna, and spills should be addressed.

  Submission No. 59

Response

Noted and agreed.

SoC M4 has been updated to include a commitment that the OEMP will address both the ongoing monitoring requirements and the management actions identified applicable to the CEMP (see Appendix B).

4.5 Project objectives and need

4.5.1 Economics of the project

(a) Issue description

- Concerns in relation to this project following recent developments in financial circles about the developers, NewGen Power, the developer of the project, is a 50:50 joint venture of ERM Power and investment firm Babcock and Brown.

  Shares in Babcock & Brown, and Babcock & Brown Power have fallen dramatically. The latter has been reported in the SMH as being 'cash-strapped' and conceded that it may have to sell the Kwinana and Uranquinty power stations before they are completed.

  What would be the implications for Wellington if the proposed project is commenced in these uncertain times?

  Submission No. 9

Response

Babcock & Brown is not associated with this project. ERM Power acknowledges that the project is at its own commercial risk. Development approval does not in itself guarantee the project will proceed. The project will be subjected to rigorous financial and economic analysis before a final decision to proceed is undertaken.

(b) Issue description

- The proposed power station was advertised to cost $500 million (made up of $350 million for the plant and $150 million for the pipeline) to provide 350 hours a year, less than an hour per day.
- Put ethics before economics and put our life before international company profit.

  Submission No. 10, 32

Response

Section 5.3 of the Environmental Assessment identified the need for peaking power stations to address the predicted supply-demand shortfall that has been identified through national and state reviews. In particularly, the Green Paper (NSW Government 2004) identified the use of these types of power stations as one of the most effective short-term measures that could be implemented to avoid supply shortfalls during peak demand periods. The Green Paper further identified that peaking plants are known to have lower capital costs than base load and intermediate plants.

4.6 Project development and alternatives

4.6.1 Continuity of gas supply

Issue description

- The continuity of gas supply can no longer be depended on. Following the 3 June explosion at the Varanus Island Gas Plant, 1/3 of WA's domestic gas supply was cut off, and it was indicated that it would be 2 months before partial gas supplies resumed. In 1998, there was a gas explosion in Victoria, which also had serious repercussions.

  What would be the implications for Wellington if the proposed project is commenced in these uncertain times?

  Submission No. 9

Response

The two explosions referred to in this submission occurred specifically at gas supply plants, which is why domestic gas supplies were cut off. Investigations into both of these incidents found that the companies' failures to equip workers with appropriate knowledge of how to manage and respond to such incidents, and failure to implement adequate contingency plans were the key causes of these incidents.

The risks of such incidents occurring at the proposed Wellington power station or along the pipeline have been assessed as being well within the DoP's risk criteria. Furthermore, the safeguards, construction techniques, operating procedures and contingency plans that would be implemented and regularly reviewed for this project would further minimise the risk of such incidents occurring, and would minimise the impacts should any occur.

Regarding the impact on domestic gas supplies, it would be highly unlikely that domestic gas supplies would be affected by any incidents occurring at the proposed Wellington power station, given the gas pipeline supplying the power station would be exclusively for that purpose, and would be separated from the domestic gas supply via mainline valves and the compressor station.

4.6.2 Supply alternatives

Issue description

- Solar power is a better option/use solar instead. it is much safer for residents and for the atmosphere.
- The real answer to our problems is solar power. Solar power excludes emissions and the need for a pipeline. It requires less land and is renewable, protecting future generations.
- The government is teaching us about how we are adding to climate change, but what are you (and they) doing? They could be building solar power stations instead.
- I don't deny that we need power but we can develop alternative sources like solar power.
- Is a gas-fired powered station the best long-term option? What about solar energy? This was not considered as an alternative in the EA — is it not powerful enough?
- What about greener solutions?
- The power station is a mistake; other resources should be used.

Submission No. 11, 25, 27, 28, 35, 36, 43, 48, 57, 60

Response

Section 5.3 of the Environmental Assessment identified the need for peaking power stations to address the predicted supply-demand shortfall that has been identified through national and state reviews. In particular, the Green Paper (NSW Government 2004) identified the use of these types of power stations as one of the most effective short-term measures that could be implemented to avoid supply shortfalls during peak demand periods. As such, ERM Power is seeking approval for a gas-fired peaking power station, which will be able to provide energy at short notice during these peak demand periods.

While it is acknowledged that solar power generation is a promising renewable energy with very low levels of greenhouse gas emissions, there are both technical and commercial limitations associated with this type of energy generation and it is not considered an alternative for meeting the rapid increase in supply needed during peak demand periods, which the proposed gas-fired power station will supply.

The Green Paper (NSW Government 2004) discusses the role of renewable and low emission technologies in addressing the emerging supply-demand imbalance. The paper similarly recognises the limitations of solar power to provide energy when it is most needed. The paper also notes that "to ensure reliability, these technologies currently need to be supported by complementary generation capacity (e.g. gas-fired power station) which can be switched on as needed" (pg 21).

Overall, development of the proposed power station would be complementary to, rather than competing with, solar power development.

4.6.3 Comparison with coal-fired power stations

Issue description

- Gas-fired power stations are only 20% cleaner than coal-fired ones.

  Submission No. 1, 2, 4

Response

ERM Power agrees that gas-fired power stations are cleaner than coal-fired ones. The gas emissions data provided in Section 9.1 of the Environmental Assessment testify to the fact that gas-fired generation is by far the cleanest form of fossil fuel generation and comprises 30% less greenhouse gasses in open cycle formation. However, this submission is interpreted as the respondent suggesting that being 20% cleaner is 'not good enough'. As discussed above and in Section 6.1 of the Environmental Assessment, while renewable energy is even 'cleaner' than gas-fired power generation, it is currently unsuitable to provide power during peak demand periods. Consequently, gas-fired power generation is the most suitable supply option to meet the need for the predicted supply demand during peak periods, and is certainly cleaner than coal.

4.6.4 Other

Issue description

- I agree that a gas-fired power station is probably better than what we have now, but its side-effects are ten times worse than what we have now.

  Submission No. 43

Response

ERM Power disagrees with this submission.

While it is acknowledged that construction and operation of the proposed power station and gas pipeline would result in some environmental impacts, the Environmental Assessment concludes that, with the adoption and implementation of the proposed environmental and management measures and safeguards proposed in the Environmental Assessment, the potential environmental impacts can be adequately mitigated and managed.

4.7 Description of the project

4.7.1 Power station specifications

Issue description

- The EA does not provide any details of gas turbine specifications, referring only to a 'Siemens' turbine as per details provided by ERM. This lack of information has made it difficult to assess the conclusions drawn regarding air emissions and noise. There is no understanding as to whether the project will use the most recent technology, or second hand or reconditioned plant. It is recommended that, prior to approval, ERM must provide actual gas turbine specifications so that noise and air quality models can be verified.

- There is no description of the type of machines that will drive the power station; therefore, there is no way of checking with the manufacturers as to possible emissions.

  Submission No. 5, 6

Response

It is acknowledged that the Environmental Assessment does not provide specifications of the gas turbines to be used at the power station. Section 7.1.1 of the Environmental Assessment explains that, "while some of the environmental assessments were based on a Siemens model gas-fired turbine (see Chapter 9), this would not necessarily be the preferred solution ... ". It goes on to explain that "... a final supplier would be selected during detailed design and would be required to comply with the environmental performance criteria and assumptions set out in this document".

Section 7.1.1 also identifies that the gas-fired turbines would use dry, low oxides of nitrogen (NO_x) technology that, during normal operation, would be expected to achieve best-practice NO_x emissions. This statement indicates that recent technology will be required to be used in order to achieve these best-practice emissions.

The air and noise assessments were undertaken based on the latest Siemens model gas-fired turbine that has been supplied at another of ERM Power's power station projects, Uranquinty. Section 10.2.1 of Technical Paper 3 (Noise and vibration assessment) discusses the acoustic design of the power station. It identifies that the proposed acoustic design of the plant relies on best technology economically available principles. Further, it states that Siemens have advised that the acoustic design of the turbine model used in the assessment provides for:

- incremental improvements that materially improve noise emissions
- turbine building and associated enclosures that are either at, or better than, industry available options
- two-stage parallel baffle silencer configuration that is equivalent to, or better than, noise attenuation provided by multiple back-end silencers.

It is confirmed that the proposed power station at Wellington would use the best economically available technology, regardless of the supplier. The SoCs have been revised to include a commitment specifically relating to the chosen turbine model complying with the environmental performance criteria and assumptions set out in the Environmental Assessment (see Appendix B).

4.7.2 Hours of operation

Issue description

- The website says the power station will only run for a couple of hours a day now but what in the future?
- There is no commitment in the EA that the plant's hours of operation would not be increased. The possibility of future expansion is not mentioned in the EA. The ERM Power website indicates that the power station will be able to operate as a peaking, shoulder or base load generator utilising its large gas storage capability and long term gas supply contracts. This certainly suggests the possibility of operations being expanded on a permanent basis to meet 'customer demand and market conditions'.

- It is said that the turbines will only run for a few hours a day now, but as power demands increase surely the noise, pollution and overall impact will increase.
- During the open day session, I asked if the hours of operation were likely to be increased. The response was that the pipeline only contains enough gas to run the turbines for a limited period (3 days supply) and that, if the turbines were to run for longer, significant modifications to the design would be required. It was then questioned that, if gas is used up at one end, why can't it simply be replaced again at the other? This question was not answered; hence, I ask it again.

  Submission No. 28, 57, 60

Response

ERM Power is seeking approval for a 600 MW open-cycle gas-fired turbine power station that would be operated as a peaking plant to supply energy during peak periods of electricity demand or at short notice during emergency situations, such as blackouts.

It is noted that the DECC has proposed Conditions of Approval for this project which include a recommendation that operation of the power station be limited to 10% of the year (see Section 4.26).

Electricity is supplied through the National Electricity Market. Based on the historical performance of the market and the expected operating cost, ERM Power has estimated that Wellington Power Station would operate at an annual capacity factor of around 4% (between 350 hours per year with all four turbines operating and 1,400 hours per year with one gas turbine operating).

ERM Power confirms that, given the operating costs of open-cycle gas turbines, there is currently no commercial incentive to operate such plant for extended hours. This situation is unlikely to change because other generation technologies, such as combined-cycle gas turbines, are cheaper and better suited to extended operation.

However, the exact hours of operation would depend on the market demand for electricity. In this context, it is noted that demand for peaking power is now increasing at almost twice the average demand for electricity. The possibility of delays to commissioning new base load generation in NSW and the implementation of an Emissions Trading Scheme are likely to further increase the requirement for peaking power.

Imposing limits on the power station's operating hours that are unrelated to the plant's ability to meet environmental objectives could constrain the commercial viability of the project to operate in the market. More importantly, such limits may constrain the plant's ability to respond to market demand at times of critical supply shortages, potentially resulting in higher electricity prices and, in extreme cases, causing blackouts.

ERM Power also confirms that, in its present form, the gas pipeline will only support about 3 days' continuous operation. The transport capacity and design of the pipeline would need to be substantially enhanced to permit longer continuous operation. This would only be viable for combined-cycle operation, which would be subject to a further approval process (see Section 4.7.3).

4.7.3 Potential for combined cycle

Issue description

- The proponent acknowledges that they may well convert to a base load station in the future, rather than a peaking station as currently proposed, as this will be more feasible in the long term.
- If the power station is capable of running as a shoulder and base-load facility, what is to stop its peak load status being permanently upgraded? What is the possibility this will happen in the future, if the power station is built?
- Page 103 of the EA highlights that the benefit of the proposed open-cycle gas-fired power station is that it has the flexibility to be converted to a combined-cycle gas turbine facility to increase the generating capacity of the station.

  The chances of requiring intermediate or base load generation in the future are quite high. The impact of this outcome on the community of Wellington could be compromising.

  It is recommended that, prior to approval, the noise and air quality assessments are to be remodelled on a combined-cycle gas turbine for both intermediate and base load generation scenarios.

  Submission No. 5, 6, 60

Response

ERM Power would only consider the conversion of the proposed gas-fired power station from an open-cycle to a combined cycle plant if, in the future, there is a need in the National Electricity Market to increase NSW's base-load generation capacity using gas-fired power generation. ERM Power would also need to ensure that, from a commercial and environmental perspective, the Wellington gas-fired power station is the most appropriate site to deliver the additional capacity. If such a need was to arise, ERM Power would undertake further detailed environmental assessment and consultation activities, and would require planning approval from the DoP. Any intention to convert to combined cycle would include further assessment and community consultation.

4.7.4 Pipeline construction

(a) Issue description

- The pipeline cuts through people's property and requires a 33-metre trench to be dug to lay a 1-metre wide pipe. Why would they need to destroy that much land to lay this pipeline?

  Submission No. 48

Response

As explained in Section 7.5.3 and illustrated in Figure 7-12 of the Environmental Assessment, the maximum width of the pipeline construction corridor would be 30 metres. A trench approximately 1 metre wide by 1.2 metres deep would be excavated for installation of the pipeline when using open cut trenching techniques. The remaining width of the corridor would not require a trench to be dug. A primary objective during the route selection

process was to avoid clearing; however, some clearing would be necessary to enable construction vehicle access, and sufficient space for pipeline preparation and installation.

This section of the Environmental Assessment explains how, following installation, the surface cover of the construction corridor would be restored, using either previously existing vegetation (on agricultural land) or native vegetation root stock (in naturally vegetated areas). This would enable the revegetation of this land.

Once the power station and pipeline are operational, agricultural practices would be able to continue on the land above the pipeline.

As also explained in Section 7.5.3 of the Environmental Assessment, directional drilling or micro-tunnelling would be used to cross major roads, rail crossings, major watercourses and sensitive environmental areas. Such techniques would reduce the width of the construction corridor, thus reducing the impact on these areas.

(b) Issue description

- The design and construction of roads and tracks across all waterways should be undertaken in accordance with the DPI's *Policy and Guidelines for Fish Friendly Waterway Crossings* and *Why Do Fish Need to Cross the Road?* The waterway crossings need to ensure that the works are undertaken with minimal impact on the aquatic environment within the immediate vicinity of the proposed works.

  Submission No. 8A

Response

Noted and agreed.

The SoCs have been revised to include a commitment to undertake design and construction of roads and tracks across waterways in accordance with the DPI policies and guidelines mentioned (see Appendix B).

The measures implemented through the CEMP will ensure works are undertaken with minimal impact on the aquatic environment.

4.7.5 Directional drilling

(a) Issue description

- The DPI supports the use of directional drilling under waterways. The DPI recommends that this technique be used for all waterways crossed during construction of the pipeline, especially the Macquarie River, Little River and Buckinbah Creek. Open cut trenching will not be supported by the DPI for these waterways.

  Submission No. 8A

Response

ERM Power interprets the last sentence to mean that the "DPI won't support open cut trenching the Macquarie River, Little River and Buckinbah Creek".

DPI's recommendation that directional drilling be used for all waterways, especially the three watercourses mentioned is noted, as is DPI's indication that they will not support open cut trenching across the three watercourses mentioned.

Sections 7.5.3 and 10.6.3 of the Environmental Assessment commit that directional drilling would be used to cross the Macquarie River, major river crossings and sensitive environments. ERM Power agrees that directional drilling should be used for the Macquarie River, Little River and Buckinbah Creek. Sections 7.5.3 and 10.6.3 have been amended to reflect this (see Chapter 6). Furthermore, the SoCs have been revised to include the commitment to use directional drilling to cross these three watercourses (see Appendix B).

ERM Power does not agree that directional drilling should be used for all watercourses along the pipeline route, since many of them are small creeks and ephemeral streams. ERM Power's previous experience in pipeline installation across such watercourses has demonstrated that open cut trenching can be undertaken in a manner that does not cause environmental impacts or disrupt the integrity of the flow of the watercourse provided appropriate environmental management and rehabilitation measures are employed.

Section 10.6.3 of the Environmental Assessment commits ERM Power to consult with the DWE prior to construction to ensure that the proposed construction methods across waterways are appropriate. This commitment to consult with the DWE prior to construction of the gas pipeline is reflected in draft SoC SW5. ERM Power has amended Section 10.6.3 (see Chapter 6) and SoC SW5 to commit to also consulting with the DPI regarding this matter (see Appendix B).

(b) Issue description

- While directional drilling generally achieves good outcomes, it is highlighted that appropriate contingency actions be detailed addressing potential problems that could be experienced during the process.

  Submission No. 8A

Response

The potential problems that could be experienced during the process of directional drilling is acknowledged, and it is agreed that such problems can occur if appropriate contingency actions are not implemented. ERM Power has a proven track record of implementing construction management practices that minimise the risk of problems occurring, and of implementing appropriate contingency actions to mitigate impacts should problems occur. Such practices would also be implemented during construction of the pipeline for this project, and would be done through the CEMP.

4.8 Power station location

4.8.1 Close to Wellington and residents

(a) Issue description

- Grave concerns with the largest gas-fired power station in Australia being proposed in a quiet, clean rural town.

- The power station is located just 3 kilometres from the town centre; smaller gas-fired power stations are usually built 12–20 kilometres away from towns.
- The power station will have many bad effects on Wellington.
- Don't think the power station should come to town because of the gases it's going to produce.
- Don't think the power station should come to Wellington because there are possibilities like contamination in the waterways.
- The power station will be in the centre of an area with a housing estate, conservation farming and a housing development area set out by Wellington Council.
- Object to the proposal of locating the power station at the current site. The EA does not support the current location. Accordingly, we believe the current site needs to be reconsidered.
- The proposed site is too close to a well-established town and residences.
- The other options, though close to Wellington and the power grid, do not impact on residential holdings to the massive extent that this site does.
- Too many people live in the area, with more subdivisions across the road of the proposed power station likely. Is that not enough to make you reconsider the site?
- It will be a bad idea to build the power station so close to Wellington.
- Consider moving the power station further out of Wellington to keep the community strong and healthy.
- The power station should be built somewhere else, not in (or near) Wellington.
- Take the power station and its toxic gases elsewhere, where it won't damage our environment or health.
- There should not be a gas-fired power station built in or near Wellington.
- Do not want the power station to be built in Wellington.
- I don't deny that we need power, but in this case we can move it away from humans.
- The power station needs to be relocated to a position where people, especially growing children, will not be in the 'emissions drop zone' and will not have their health unnecessarily put at risk.

  Submission No. 1, 2, 4, 5, 6, 7, 11, 14, 15, 16, 17, 20, 30, 34, 35, 38, 43, 53, 55, 57, 60

Response

The concerns of the respondents about the location of the proposed power station are noted.

Sections 4.8.3–4.8.5 address concerns raised about the selection process of this site, and its proximity to the Wellington township and sensitive receptors.

Sections 4.11.3–4.11.5 addresses the concerns raised relating to the potential health impacts of the air emissions from the power station.

(b) Issue description

- ERM has already tried to put a power line above our heads and now we have to fight them again. When will common sense prevail?

  Submission No. 57

Response

The Wellington Power Station project is ERM Power's first infrastructure project in Wellington. ERM Power has not been involved in any power line projects in Wellington or in the greater region.

4.8.2 Location keeps changing

Issue description

- Concerns relating to the location of the power station and pipeline, and the fact that the location keeps changing.

  Submission No. 12

Response

The proposed location and orientation of the power station, and the route of the gas pipeline were finalised prior to the commencement of technical studies for the project.

4.8.3 Economics driving site location

(a) Issue description

- It is common knowledge that the deal to use the preferred site (and not Site 2) was brokered between one of the ministers and the landholder.

  Submission No. 1, 2, 4

Response

Negotiations to purchase the land on which the power station would be located occurred solely between the landholder and ERM Power; there was no political involvement in these negotiations.

(b) Issue description

- ERM looked at a site at Cobar, which was a perfect site; however, it was a distance from a power grid so their expenses were higher. ERM is putting the dollar in front of environmental, human and visual factors.
- ERM has chosen this site only because it is the cheapest option.
- Site seems to have been selected based on dollars and not people. Long-term health is far more important than short-term costs.
- ERM doesn't want Site 2 as it will cost more money. I think it will cost a lot more in legal charges when residents start suing over ill health effects.

  Submission No. 1, 2, 4, 7, 57, 60

Response

ERM Power acknowledges that its power project for Cobar was an unrelated proposal to provide base-load generation at Cobar in response to Country Energy's call for non-network solutions to meet the demand for electricity in central and western NSW. Country Energy decided not to proceed with the project.

ERM Power acknowledges that economics are an essential consideration when developing and undertaking any business venture. Not only do the economic outputs and inputs of the proponent need to be considered, but the economic impact of the product or operation of the business venture on the users/consumers also needs careful consideration. In saying that, however, ERM Power did not base the selection of the site near Wellington solely on cost. As discussed in Section 6.2 of the Environmental Assessment, five primary criteria were applied to the site selection process. These considered physical space constraints, potential interruptions to existing operations, existing network connection constraints and benefits, and environmental sensitivity. Sections 4.8.4 and 4.8.5 address issues raised regarding this selection process and the subsequent selection of the Wellington site.

4.8.4 Selection criteria

Issue description

- The selected site does not satisfy first criterion: Availability of a sizeable block with sufficient distance from neighbouring residences to minimise environmental impacts during construction and operation.

  There is no buffer zone between the site and neighbouring residences; it is in a valley with undulating topography, within 2 kilometres of a major river and the township of Wellington; it fails to meet noise, visual, air quality, historical heritage and social impacts.

  Submission No. 5

Response

ERM Power disagrees with this submission.

Wellington 330 kV substation is the largest electricity hub in Central NSW and was constructed during the mid-1970s. Its presence, including the marshalling of numerous high voltage power lines that service Central NSW, has been a disincentive for the development of adjacent properties and the land surrounding the substations has remained largely uninhibited and used for grazing stock for more than 30 years.

Wellington substation is located on 53 hectares of land, which was once owned by the Barton family that continues to own the closest residence to the proposed power station site — Nanima House (approximately 700 metres away). Otherwise, the next nearest residences are more than 1.2 kilometres away, and the outskirts of Wellington are approximately 2 kilometres away on the other side of the Macquarie River.

The majority of the land surrounding the proposed power station site (including the Wellington substation land) is zoned 1(a) Rural. Wellington Council has recently approved the application for ERM Power to subdivide the land to determine the power station property boundaries (application no. 53/2008).

The proposed power station site is located as close as practicable to the south-west corner of the substation within a lot approximately 45 hectares in size. The completed power station would have a footprint of approximately 6 hectares, providing ample space for a buffer zone around the plant (approximately 300 metres from the power station to its closest property boundary).

As discussed in Sections 4.11, 4.13, 4.15, 4.18 and 4.20, the Environmental Assessment investigated the potential impacts of the power station on air quality, visual amenity, cultural heritage and the social environment. It concluded that the project would not have a significant adverse impact on the environmental amenity of the local area, and that any impacts would be effectively minimised through the implementation of the mitigation and management measures that ERM Power has committed to, as reflected in the SoCs that were provided in the Environmental Assessment and revised in response to the submissions presented in this report.

ERM Power acknowledges that the noise levels that were predicted at the nearest residence (Nanima House) could exceed the noise criteria established for this project under certain meteorological conditions. Issues relating to Nanima House are addressed in Section 4.23.

4.8.5 Alternate sites preferred

Issue description

- It is recommended that the project is relocated to an alternate site.
- Over the last 18 months, the proponent had advised on a number of occasions that there were no alternate potential sites for this project; Site 1 and Site 2 were never discussed.
- It is safer and cheaper in the long run to use Site 2. This site is not promoted as the initial outlay is more. But the impact on environment and personal property is less.
- Site 2 satisfies the first criterion to a greater extent than the selected site. This is the substance of an EA.
- Site 2 is advantageous over the selected site because: it is only 6.5 kilometres from the substation on the proposed pipeline route; it is located away from the township of Wellington; it is built in a buffer zone; it would save 6.5 kilometres worth of pipeline installation. This would be replaced with 6.5 kilometres of overhead transmission lines, which would not have such a significant visual and social impact as a power plant on the selected location; the additional cost of a switching station would be offset by the saving in meeting social, visual, noise and air quality mitigation measures; any loss of power and efficiency over the 6.5 kilometres of transmission line would be negligible; stormwater runoff management issues would be similar to the selected site; it would retain the perceived economic benefits for the town of Wellington.
- It is recommended that the proposed site be moved to the reserve that is near recommended Site 2.
- Site 2 is considered to have less potential impacts on all residents of Wellington.
- Despite Site 2 fulfilling all of the environmental standards, it is discarded on the basis of hindering further development and feasibility.

Submission No. 1, 2, 4, 5, 6, 12

Response

ERM power maintains that that the proposed power station site has a lesser environmental impact that the alternative sites. At the proposed location, only one near resident would be affected by the project. At either of the alternative sites, ERM Power would need to construct 5–7 kilometres of new 330 kV transmission lines to connect the power station to the Wellington substation. These transmission lines would have a significant impact on affected landowners as well as a considerable, ongoing visual impact within the locality.

Notwithstanding the above, in order to arrange for the construction of the transmission line connections to the alternative sites, ERM Power would need to secure voluntary agreements for the establishment of easements from the affected landowners. Resistance or refusal by a single landowner to agree on the terms of the easement, irrespective of how reasonable they might be, would introduce extensive delays and could render the project unviable.

4.8.6 Site 2 still a hazard

Issue description

- Even if the power station is moved to Site 2 it is still a hazard, as Maryvale is approximately 2 kilometres from this site, with approximately 100 residents. I have a sick family member and do not want them to have any hazards.

Submission No. 44

Response

The proximity of Maryvale to Site 2 is noted.

4.9 Gas pipeline route alignment

Issue description

- Figure 6.3 in the Environmental Assessment is incorrect. The green dotted line that should show route A is actually the proposed pipeline route shown in solid red. The dotted purple line is the route known as B. It was route B that was surveyed as part of the Aboriginal cultural assessment.

Submission No. 12

Response

Figure 6.3 in the Environmental Assessment is correct. The solid red line is the proposed pipeline route that was refined through a workshop using high-resolution aerial imagery and other GIS data, and was further refined following on-site consultation with affected land owners.

Close inspection of Figure 6.3 identifies that the proposed pipeline route and route A, the green dotted line, are slightly different.

The survey of route B during the Aboriginal cultural assessment is addressed in Section 4.15.1.

4.10 Greenhouse gas emissions

Issue description

- The power station could affect the greenhouse (sic).
- The power station could contribute to greenhouse gases and global warming.

Submission No. 23, 24, 28

Response

As required by the DGRs, a comprehensive, quantitative greenhouse gas assessment was undertaken to identify potential greenhouse gas emissions associated with construction and operation of the project (see Section 9.1 in the Environmental Assessment). In relation to the power station, the assessment concluded that, while generally speaking, operation of the power station has the potential to generate a large quantity of greenhouse gases, in the context of comparable coal-fired generation, the proposed power station provides a low greenhouse intensity alternative. Furthermore, it concluded that the proposed power station would be environmentally beneficial in comparison to increasing the capacity and usage of the currently available power generation pool in Australia. The project would qualify for NSW Greenhouse Abatement Certificates, with more than 50,000 certificates expected to be produced per year. (It is noted that the Greenhouse Abatement Certificates are being phased out with the introduction of the emissions trading scheme.)

Section 4.6.2 addresses the current unsuitability for cleaner, renewable energy sources to supply the required power supply during peak demand periods.

4.11 Air quality

4.11.1 Emission levels exceed limits

(a) Issue description

- Emissions will exceed Australian standards over Cadonia Estate.
- Glenbrae will receive the highest concentration of exhaust emissions.
- The gases will descend on my house.
- Air quality issues will exceed EPA guidelines at Nanima House.
- No one can give us a definite answer on the emission level and even what has been suggested is way over what is considered to be of an acceptable standard.

Submission No. 3, 6, 7, 11, 24

Response

The air quality impact assessment (Technical Paper 4) undertook modelling to predict air emissions from the power station during its two key operating conditions: start-up and normal operation. The modelling accounted for meteorological conditions and the topography of the area (see Chapters 4 and 5 of Technical Paper 4).

The modelling predicted that during normal operating conditions all air emission parameters would be well below the adopted goals.

The modelling predicted that, during start-up conditions, PM_{10}, SO_2 and CO would be well below the adopted goals. NO_x (as NO_2) was predicted to exceed the adopted goal for a 1-hour period. This maximum concentration was predicted to occur to the north-east of the site, near Cadonia Estate. It is noted, as explained in Technical Paper 4 and in Section 9.2.3 of the Environmental Assessment, that during start-up conditions, exceedances of the 1-hour NO_2 air quality goal were predicted to occur on the assumption that start-up emissions would be generated for 1 hour. However, start up conditions would only occur over a 6-minute period (the start-up period) and would then change to levels predicted for normal operations. As the shortest time-averaging period for both the available meteorological data and air quality data is 1 hour, the average concentration would comply with the adopted goal. Therefore, emissions from the power station during start-up conditions would not adversely affect the nearest sensitive receptors or the receiving environment.

ERM Power acknowledges that the air emissions from the proposed power station are predicted to disperse in the direction of Cadonia Estate; however, given the predicted compliance with all air quality goals, ERM Power is confident that the operation of the power station will not impact the air quality of the region.

It is noted that the predicted air emissions during start-up and normal conditions are well below the adopted limits for all parameters at Nanima House.

(b) Issue description

- What happens if air monitoring is done on properties and pollution levels are found to be unacceptable? Will the power station close down?

Submission No. 60

Response

As identified in Section 9.2.6 of the Environmental Assessment, ERM Power would regularly monitor emissions from the turbines by operating in-stack limits. This would be a requirement of the environmental protection licence for the project.

In its submission, the DECC has proposed Conditions of Approval relating to air quality monitoring and performance verification. The DECC recommended that, if air quality monitoring of the operating power station determined that emissions of air pollutants exceeded the adopted limits, the proponent would need to provide details of remedial measures to be implemented to reduce these emissions to no greater than those permitted under the approval. Details of these measures and a timetable for implementation would be submitted and accompanied by evidence that satisfies that the remedial measures are acceptable. ERM Power would support this course of action.

4.11.2 Air pollution

Issue description

- Air pollution will occur, something people move to Wellington to escape
- Wellington's air is so fresh, clean and clear, unlike city air, which is highly polluted. The power station will turn our country air into city air.
- The power station will produce a hot haze of significant amounts of sulphur dioxide, carbon monoxide and carbon dioxide, contaminating the air.
- Kids will 'suck in toxic fumes'.
- Air quality will be diminished due to the emissions.
- Concerns relating to the air pollution from the power station and its health impacts on Wellington, which currently does not experience air pollution.
- Currently, Wellington does not experience air pollution or odour emissions. It is reasonable to expect that the introduction of the power station will increase air pollution to some extent.
- The power station is going to affect our residents with the gases.
- The power station will cause air pollution.
- Wellington will become smelly and smoggy.
- Wellington people are not used to the types of fumes the power station will produce.
- Wellington doesn't want to be known for its pollution problems.
- Wellington people don't want the town to become as polluted as Sydney.
- The pollution caused by the power station will be a terrible problem to Wellington and surrounding areas.
- Australia deserves better than to be polluted by poisonous gases.

  Submission No. 1, 2, 4, 11, 12, 14, 15, 16, 17, 19, 22, 35, 38, 43, 45, 47

Response

As mentioned above, the air quality impact assessment, which was undertaken in accordance with the *Approved Methods and Guidance for the Modelling of Air Pollutants in New South Wales* (DEC 2005) as required by the DGRs, predicted that air emissions from operation of the power station would be well below the adopted limits for all parameters and that a minimal impact on the local air quality of Wellington would be expected.

ERM Power is confident that, based on the results of the air quality impact assessment, Wellington would not become known for its 'pollution problems' and its air quality would certainly not be compared to that of somewhere like the city of Sydney.

The 'hot haze' referred to in one of these submissions would not be experienced. It is acknowledged that hot exhaust gases would be vented to the atmosphere at high velocity and temperature (approximately 40 metres per second and 500°C respectively), which would ensure the hot gases leaving each stack would be extremely buoyant and rise high above the facility in a matter of seconds. Under these conditions, the estimated plume rise

(based on a 40°C ambient temperature) would be more than 130 metres above ground level in less than 5 seconds. During this short time period, little to no transfer of heat between the hot plume and the ambient air at ground level would be expected. It is noted that, under cooler conditions, the plume rise would be even greater, as the temperature difference between the hot plume and the ambient air would significantly increase the buoyancy of the hot plume, thus increasing the height of the plume rise before significant dispersion occurs.

Operation of the proposed power station would not result in Wellington becoming odorous or smoggy, as the air emissions are predicted to be well below the adopted limits; some parameters (e.g. SO_2 and CO) were barely detectable in the modelling and only a tiny fraction of their adopted limits.

4.11.3 Health effects

Issue description

- Husband allergic to sulphur—what does this mean for him with sulphur being emitted from the stacks?
- Sulphur from the power station could make people sick.
- I would like to know how the emissions of sulphur from the plant will affect the health of people allergic to sulphur.
- Will daily exercise near the power station just create illness from breathing toxic fumes?
- People with breathing problems might be affected by the different gases put out of the power station.
- Asthma will get worse.
- The power station will release gases, such as sulphur, carbon dioxide, nitrous oxide and methane; these could cause sickness, particularly for those allergic to sulphur or with asthma.
- I have asthma, and am allergic to dust and many more chemicals. I am a very keen sportsperson. I could possibly have to give up my dream and passion of making it as a professional runner because I can't train or run because the air is so polluted.
- The gases produced by the power station will cause an increase in asthma and bronchitis. Rural people have little access to medical services now and this will increase the problem.
- Dust will be generated during construction and some residents are allergic to dust.
- People will get sick/it will affect their health.
- The power station will get sued by sick people in future.
- Sickness from gases will force us to move and ruin our family history.
- The chemicals emitted may also affect unborn babies and small children a lot more dramatically than science can prove at this point in time.

- Kids are more likely to be affected by pollution. Until we know that there is absolutely no adverse long-term health risk resulting from these emissions particulates, we must protect Wellington children.
- Emissions from the power station will sink over the valley, which will greatly affect the health of the community.
- What are the long-term health effects of ingesting toxins from pollution?
- It is mentioned that the pollution will go in a north-easterly direction over Cadonia Estate. We have built our dream home there, have young children and are worried about their health.
- The plumes emitted at start-up and shut-down will cause adverse health outcomes on the town and nearby residences.

  Submission No. 6, 11, 19, 20, 21, 23, 25, 26, 27, 28, 31, 32, 33, 34, 35, 36, 37, 39, 40, 42, 43, 46, 56, 57, 60

Response

The air quality impact assessment was undertaken in accordance with the *Approved Methods and Guidance for the Modelling of Air Pollutants in New South Wales* (DEC 2005) as required by the DGRs. The NSW ambient air quality goals provided in this document were adopted where possible for the assessment. The national goals adopted for the assessment were based on the recommendations of the *National Health and Medical Research Council* (1995) and the *National Environmental Protection (Ambient Air Quality) Measure* (NEPC 1998) prepared by the National Environmental Protection Council (NEPC). Table 3-1 of Technical Paper 4 lists the adopted air quality goal for each parameter for a number of time averaging periods (e.g. 10-minute, 1-hour, 24-hour, annual).

Section 9.2.3 of the Environmental Assessment summarises the results of the air dispersion modelling for operation of the power station. These results indicate that, during normal operation, the emission levels of all parameters from the power station are predicted to be well below their adopted goals.

Regarding the concerns raised about the impacts of sulphur emissions on people allergic to this substance, the findings of the assessment indicated that the maximum predicted ground-level concentration of SO_2 from the operation of the power station is less than 0.5% of the adopted goal for all time averaging periods. This emission level would be barely detectable and would not result in adverse health effects. Overall, no adverse health effects would be expected to occur from operation of the power station, including to those people with existing asthma and other respiratory problems.

ERM Power has committed to run the gas-fired turbines with dry, low NO_x technology to achieve best practice NO_x emissions during operation of the power station. ERM Power has also committed to undertake extractive monitoring to demonstrate compliance with in-stack limits. The DECC has proposed Conditions of Approval relating to air quality; these are discussed in Section 4.26.

Dust generation is a common factor in most construction activities that involve earthworks. ERM Power acknowledges that some dust generation will occur during construction of this project (see Section 9.2.3 of the Environmental Assessment). Standard dust suppression

techniques have been developed and are effective in minimising the potential impacts of dust on local air quality. ERM Power has committed to implementing these dust suppression techniques (see Section 9.2.6 of the Environmental Assessment) through the CEMP. Further, ERM Power has committed to undertake dust monitoring to ensure these measures are effective (see SoC A2). Through implementation of these mitigation measures and commitments, ERM Power is confident that the amount of dust generated during construction would be effectively minimised. The DECC has requested an amended to draft SoC A4 and has also requested an additional SoC regarding dust suppression measures; these are addressed in Section 4.25.1.

4.11.4 Particulates

Issue description

- The EA fails to disclose or analyse the particulates, which could be damaging to health.
- Informed that particulate matter is the most dangerous (to health) part of emissions but no information could be provided on what it consists of. This is of particular concern to local residents who all collect rain water from their roofs for drinking, washing etc.
- Main concern is long-term exposure to emission particulates causing future adverse health effects.

Submission No. 6, 7, 60

Response

Section 6.1 of Technical Paper 4 explains that fugitive dust particles are generally referred to as PM_{10} (particulate matter less than 10 µm in aerodynamic size) and that, because they are so fine and small, can be dispersed over greater distances from the source than larger dust particles. PM_{10} was analysed in the air quality impact assessment during the construction and operational phases.

The construction impact assessment concluded that, "although the qualitative assessment undertaken cannot confirm compliance with current air quality goals, anticipated levels of particulate matter impact potential are not considered excessive", and that "negligible dust impacts from construction activities are anticipated beyond 200 metres from the dust generating activity".

The operational impact assessment predicted the dispersion of PM_{10} from the power station. The maximum predicted ground-level concentration of PM_{10} was only 2.6% of the adopted NEPM 24-hour averaging period, indicating that there would be negligible impacts of fine fugitive dust particles on the local air quality.

Chapter 3 of Technical Paper 4 explains that an NEPM 'advisory' standard has been established for $PM_{2.5}$ concentration levels, which is 25 µg/m^3 for the 24-hour averaging period. It goes on to say that, given the existing advisory status of the $PM_{2.5}$ criterion, detailed assessment of impact potential was not undertaken. Nonetheless, the analysis adopted a conservative assumption that all the PM_{10} predicted to be emitted from the power station would be $PM_{2.5}$ (which are smaller particles so have greater impact potential), and found that compliance with the 25 µg/m^3 goal would also be achieved.

4.11.5 Wagga Wagga Health Risk Assessment

Issue description

- The Wagga Wagga Health Risk Assessment was attached to the submission. This report uses the phrase "the potential impact is considered acceptable" and then, relating to chronic non-inhalation exposure states that the magnitude of potential adverse health effects cannot be estimated. This is not acceptable if the long-term health risk from emitted contaminants is not known. Until the health risk is known, probably by monitoring the long-term health of people living near already-established gas-fired power stations, then no future plants should be built within the 'emissions drop zone' radius of residences.
- The Wagga Wagga Health Risk Assessment provided by the proponent refers to cancer risk. While realising that this is a disease that certainly needs to be considered, what about other medical problems that can occur when toxins have been absorbed into people's bodies after long-term exposure? These don't seem to have been considered. How much exposure is needed to trigger other diseases? The report lists ways in which people can absorb contaminants and then goes on to say that the risk is below the NSW EPA risk criterion — how can this conclusion be drawn when another point in the report points out that cumulative effect of long-term exposure cannot be determined for the report?

Submission No. 60

Response

It is noted that ERM Power provided the Wagga Wagga Health Risk Assessment to the respondent as a ‘typical’ assessment of a similar project in response to the respondent’s request for information that was beyond the scope of the Wellington project (as indicated by the fact that the DGRs issued for the Wellington project did not request a health risk assessment; nonetheless, this was partly addressed as part of the air quality assessment (Technical Paper 5) and preliminary hazard analysis (Technical Paper 6)).

The scope of the Wagga Wagga Health Risk Assessment as directed by the DGRs for that project focused on health impacts from air inhalation. It was outside the scope of that assessment to address health impacts due to non-inhalation exposure such as through water or soil. The Wagga Wagga report states that the potential impact on health due to inhalation is considered acceptable and, therefore, emissions from the plant would have no adverse impacts on the receiving population.

The Wagga Wagga Health Risk Assessment Report reference to individual cancer risk was based on exposure through air inhalation, soil intake, dermal contact, water ingestion and contaminated garden produce. The cumulative effect of long-term chronic non-inhalation exposure was not determined as part of this assessment as it did not fall within the scope of the DGRs.

4.11.6 Data source

Issue description

- No air samples were taken from Wellington, giving false figures.
- No reference is made to the Galbally Report in the EA, in relation to background air quality data for the study area.
- The regional surface wind profiles for Dubbo and Mudgee are not necessarily reflective of those in Wellington.
- Wind direction and climate data is based on Dubbo when data is available from the Bureau of Meteorology (BOM) relating specifically to Wellington (i.e. the old Wellington Soil Conservation Station (65035) from 1965-2005) and from the Wellington Agrowplow Site (65034) from 2005-present day).
- A problem with the air assessment is that site-specific data was not recorded at the project site. The locations of the data used (from Bathurst, Bargo and Bringelly) are not close to Wellington, and it cannot be assumed that the air quality baseline data is the same.
- It is concerning that some of the baseline data used is 4 years old.
- It is not clear that the proponent has undertaken any site-specific testing or analysis of local conditions in Wellington.
- The Air Quality Report does not state the date the wind data for Wellington was obtained.
- The wind and weather patterns of Wellington were not checked; Dubbo's wind and weather was used, which is not the same as Wellington's.
- No monitoring of air around the Wellington district was done for the EA. Should the power station go ahead, I would expect that a comprehensive program of air testing be done throughout the community at different times of the year and in different weather conditions. Unless this is done, there will be no way to accurately measure and control pollution increases.

Submission No. 3, 5, 6, 12, 21, 60

Response

Section 4.1 of Technical Paper 4 explains that "sufficiently detailed background air quality data is not currently available (PM_{10}, NO_x, NO_2, O_3 or SO_2 levels) for the study area". As such, air quality data measured for Bargo, Bathurst and Bringelly was adopted as background concentration levels for the project. This data was considered to be the best data available. Furthermore, it was considered to be a conservative estimate of the typical (or indicative) ambient air environs for the study area because the NO_2 and O_3 levels at Bringelly were increased due to significant contributions of emissions from commercial and domestic vehicles; these would not be expected in the Wellington area.

ERM Power maintains that the background air quality data used were the best available and provided a conservative estimate of the typical ambient air environs for the study area.

The data compiled from the BOM Wellington Station (065034) was considered when deriving the meteorological conditions for the project area. However, although some data was

available from this station, it did not provide all the required parameters or amount of data for input into the modelling program (the CSIRO developed TAPM program). As such, meteorological data from the BOM Dubbo and Mudgee stations was used. The topography of the Wellington area around the project site was used in the model to use in association with the meteorological data. Section 5.2.1 of Technical Paper 4 explains that over 17,000 individual temperatures, wind speed and wind direction events were compiled for modelling purposes, which guaranteed that worst-case conditions were adequately represented in the model predictions.

Meteorological data from 2000 to 2005 was used to develop the Wellington wind profiles.

The DECC has proposed Conditions of Approval relating to air quality, and particularly relating to verification of air quality performance; these are discussed in Section 4.26.

It is noted that, in its submission, the DECC supported the methodology used for the air quality impact assessment.

4.11.7 Assessment methodology

(a) Issue description

- Table 4-1 of the EA states that the DECC requires that the EA must utilise 12 months of local meteorological data where potential impacts may be close to criteria. The EA states that, during the start-up scenario, the NO_x concentrations are predicted to exceed DECC air quality goal. Therefore, 12 months of local data is warranted in this circumstance.
- It is recommended that all air quality models should be validated by actual and current air samples, and meteorological data from around the proposed site over a 12-month period in accordance with the DECC recommendation.
- The GAC questions the adequacy of the methodology used in the assessment and reporting process.
- It is recommended that modelled data on the air quality impacts on the town of Wellington must be provided prior to project approval.
- It is recommended that the models need to address impact on drinking water from residential roofs and the cumulative impact of toxins on pastures, human and animal health prior to project approval.
- The proponent should undertake thorough testing of the local weather conditions (including wind and fog patterns), wind patterns and existing air quality levels in Wellington to ensure that the analysis and reporting process for the proposal is based on accurate information.
- The results of the local weather and air quality and odour surveys must be resubmitted in a revised Environmental Assessment Report. The community must be given the opportunity to comment on this report.

  Submission No. 5, 12

Response

As explained in Section 6.2 of Technical Paper 4, Section 9.2.3 of the Environmental Assessment and Section 4.11.1 of this report, the air emissions modelling of NO_x (as NO_2) during start-up of the power station was predicted to exceed the adopted goal for a 1-hour period. This maximum concentration was predicted to occur to the north-east of the site, near Cadonia Estate. It was explained that, during start-up conditions, exceedances of the 1-hour NO_2 air quality goal were predicted to occur on the assumption that start-up emissions would exist for 1 hour. However, start-up conditions only exist over a 6-minute period (the start-up period) and would then change to levels predicted for normal operations. As the shortest time-averaging period for both the available meteorological data and air quality data is 1 hour, the average concentration would comply with the adopted goal, and would not be close to exceeding the criteria. As such, the background air quality data used in the air quality impact assessment is considered appropriate. Hence, ERM Power maintains that the results of the air quality modelling are an accurate representation of what would be expected, so does not believe that further testing of existing weather or air quality conditions is required.

ERM Power has committed to undertake extractive monitoring to demonstrate compliance with in-stack limits. The DECC has proposed Conditions of Approval relating to air quality; these are discussed in Section 4.26.

(b) Issue description

- It is acknowledged that AERMOD, which was used to model air quality, does not simulate calm conditions. This has significant consequences for the integrity of the modelling process as page 13 of Technical Paper 2 states that "a higher frequency of calm conditions was measured during the winter months". Page 14 then confirms that stable conditions were present for 25% of the year. Therefore, AERMOD is not considered an appropriate model in this instance.
- An American dispersion model has been used. Does this apply to Australian geographic and climatic conditions?
- It is recommended that a more appropriate model, other than AERMOD, be used for the purpose of air quality assessment, prior to project approval.

Submission No. 5, 57

Response

It is accepted that AERMOD does not simulate calm conditions. Calm conditions relate to wind speed only and occurs when the wind speed is less than about 0.5 m/s. Analysis of the wind roses reveals that annual average calm conditions occurs for 1.8% of the time using meteorological data for the years 2004 and 2005. This is considered to be low. A higher frequency of calm conditions occurs in winter (2.6%) and the lowest in spring (1.3%).

Given the low level of calm conditions at the Wellington site, the AERMOD model used for the modelling assessment is appropriate and the integrity of the output results have not been compromised.

It is also agreed that 17% and 25% of stable (Pasquill stability class E) and very stable (Pasquill stability class F) conditions respectively occurred using the 2004-05 meteorological

data set. The Pasquill stability classes take account of the following three meteorological parameters: wind speed, daytime incoming solar radiation and night-time cloud cover. Stability class F conditions occur when wind speeds are 2-3m/s and night-time cloud cover is less than 50%.

Notwithstanding the occurrence of stable and very stable meteorological conditions, the dispersion modelling show there would be no adverse impact at all sensitive receptors under normal operations.

During start-up conditions, the maximum predicted levels of NO_x exceed the air quality goal. However, NO_x levels are not exceeded at any of the sensitive receptors. Furthermore, start-up conditions only exist over a 6-minute period (the start-up period) and would then change to levels predicted for normal operations. As the shortest meteorological averaging period is 1 hour, the NO_x (as NO_2) concentration averaged over this period would comply with the 1-hour air quality goal of 246 $\mu g/m^3$.

AERMOD is a US EPA approved model that can be used in any part of the world, including Australia. The model used local meteorological and topographical information for this project and is, therefore, an appropriate model for this situation.

(c) Issue description

- The topographical information in Section 3.3.1 does not support the conclusion in Section 3.4.3. This is reinforced by page 16 of Technical Paper 4, which refers to the undulating nature of the proposed site.

  Katabatic drift has been regularly observed on the project site over the last 6 years. In winter, smog can reside on the site and down in the valley until midday. This is enhanced by the extreme temperature inversions. We believe that there is potential for plume entrapment, which will then move the cold air downhill towards the Macquarie River and the town of Wellington.

  If the assumption in Section 3.4.3 has been used in the modelling, then the model may have resulted in an inaccurate result.

- In cooler months, Wellington will experience heat inversions; this will trap contaminants over Wellington.
- Wellington in lowest point in valley, pollution will concentrate and settle in town, adversely impacting human health and residential amenity.
- There was no mention of the winds that prevail over Wellington. The wind does not just come from one direction. I believe that temperature inversion will occur in the valley, meaning that at night the clouds will sink over the valley and lock the pollutants over the residents' heads for them to breathe in.
- How often will the emissions settle like an invisible blanket over the town? Or will it just, again, be over the same houses identified as sensitive receptors? The EA indicates that "F-class dispersion conditions were present for approximately 25% of the time for the years 2004-05". Seeing F-class conditions are the worst case (least dispersion), this suggests that emissions will hover over the district for 25% of the time. Not something Wellington will want to look forward to.

- The study fails to address the impact on the Wellington Valley; it only shows the fall out away from town. As far as I know the wind blows in more than one direction out here.
- The EA states that the impact of emissions from the power station could be observed at considerable distances from the emission sources. The town of Wellington is located within 2 kilometres of the proposed site, but Figures 6–1 to 6–4 of Technical Paper 2 show limited impact over the Macquarie River towards the town. This is concerning as it is well-known that wind and air flows predominantly come from north-west and north east towards the town.
- Apparently the emissions will predominantly drift north-east. Is this caused by prevailing winds and/or the Wellington topography? Will the emissions never drift over town? For how many months of the year should they be expected to disperse north-east?

Submission No. 1, 2, 4, 5, 12, 18, 57, 60

Response

Section 5.2 of Technical Paper 4 acknowledges that the impact of emissions from the power station could be observed at considerable distances from their emission sources. As such, a large grid size 4.6 x 4.6 kilometres was constructed and used in the model to predict air emissions from the power station. This large grid size meant that potential air emissions across the Wellington township were considered in the model. Tables 6-1 and 6-2 of Technical Paper 4 tabulate the predicted air parameter emissions from the power station during normal operation and start-up mode respectively. These tables list the maximum predicted ground level concentration of each parameter and include a corresponding GPS coordinate of where that maximum was predicted to occur. Although some of the maximum ground level concentrations were predicted to occur over the Wellington township, the majority were predicted to occur to the north-east and east of the power station site. Appendix F includes a diagram that shows the extent of the grid used in the modelling, to provide a reference to Tables 6-1 and 6-2 of Technical Paper 4.

It is acknowledged that katabatic drift and temperature inversions occur at Wellington from time to time.

Katabatic drift tends to occur as downslope winds flowing from the high elevation of mountains, plateaus and hills down their slope to valleys or planes below. This can result in plume entrapment and poor dispersion of air pollutants. It is considered that, due to the undulating nature and sloping inclination (3–10%) of the project site and the surrounding area, katabatic drift is an uncommon occurrence and its potential for adverse air quality impact is minimal.

Temperature inversions generally occur when the air above the surface of the earth is warmer than the air above it, which can lead to air being trapped close to the ground with potential adverse pollution impacts. The dispersion modelling assessment predicted that during normal operations, the levels of NO_x were below its air quality goal. The modelling also predicted an exceedance of the air quality goal during start-up, which occurs for only 6 minutes. Temperature inversions that may occur at Wellington are not considered to cause a build-up of poor air quality (such as smog) as a result of low levels of pollutants predicted to be emitted from the proposed power station. Furthermore, most maximum pollutant concentrations have been predicted to occur to the north-east of the proposed power station

site, which is in the opposite direction of the Wellington township. Hence, temperature inversions in the Wellington area are not considered to have an adverse air quality impact.

Pasquill stability class F conditions have the potential to result in the poor dispersion of pollutants. However, the modelling results, based on 2 years of meteorological data that included worst-case dispersion conditions, predicted that operation of the power station would not result in adverse impacts at any of the sensitive receptor. Furthermore, the contour plots (Figure 6-1 to 6-6 in Technical Paper 4) show that compliance with the NO_x air quality goals at the Wellington township would be achieved.

4.11.8 Statement of Commitments

Issue description

- The draft SoC refers to a "reasonable and feasible approach to limiting air impact" and "periodic extractive monitoring to demonstrate compliance with stack limits" and "a…program will be implemented for all plant items".

  This commitment will probably not be comprehensive enough to satisfy the local stakeholders where emissions particulates are expected to fall.

  ERM must monitor air quality and the level of emission particulate 'fallout' at sensitive receptor points throughout the community.

  Submission No. 60

Response

The DECC has proposed conditions of approval relating to ongoing air quality monitoring of emissions from the power station. This monitoring which is not unlike that proposed by ERM power in the Environmental Assessment would ensure adherence to adopted air emission goals. ERM Power has not identified any issues with this proposed condition.

4.12 Noise and vibration

4.12.1 Ambient noise levels

Issue description

- Ambient noise level at Wellington has been estimated at 30 dbA, but it is much lower than this.
- The actual background noise is much lower than the 30 dB that is taken as the norm.

  Submission No. 7, 60

Response

It is acknowledged that Section 3.5.1 of the Environmental Assessment and Section 4.1 of Technical Paper 4 (Noise and vibration assessment) identify that the measured background noise levels for the study area are below 30 dB(A) L_{A90} for the daytime, evening and night-time periods.

As required by the DGRs, the noise assessment was undertaken in accordance with the DECC's *Industrial Noise Policy* (INP). Section 3.1.2 (pg 24) of the INP states that "where the rating background level is found to be less than 30 dB(A), then it is set to 30 dB(A)".

4.12.2 Operational noise predicted

Issue description

- What operational noise is expected? How far might these noises carry? What times of the day/night might they occur?

  Submission No. 60

Response

A comprehensive noise and vibration impact assessment was undertaken for the project in accordance with the requirements of the DGRs. This assessment is summarised in Section 9.3 of the Environmental Assessment and is provided in full in Technical Paper 3. The report identifies what operational noise would be expected from the power station during both neutral and adverse meteorological conditions for the worst-case 15-minute period of the day; it also explains the influence of meteorological conditions on received noise levels. The report provides a visual representation of these predicted noise levels during neutral conditions around the site; this indicates how far the noise is expected to carry.

Chapter 5 of the Environmental Assessment discusses the need for the project. This chapter explains that electricity generation is required to supply electricity during peak demand periods, which generally occur on very hot or very cold days, and usually in the morning and evening. This provides an indication of the times of the day or night that the power station would operate. It is unlikely that generation would occur very late into the evening, or early in the morning, and so sleep disturbance is expected to be minimal. However, the exact times of the day and night cannot be determined, as operation of the power station would be subject to market conditions. Furthermore, the level of noise experienced during these times of the day and night would be influenced by meteorological conditions.

4.12.3 Excessive noise, limits exceeded

(a) Issue description

- The power station will exceed Australian noise standards on two properties.
- The EA has stated that the project is non-compliant with noise impacts at Mount Nanima and Nanima House during both construction and operation of the power station.
- Noise from the proposed power station will have major adverse impacts on Nanima House, substantially exceeding EPA guidelines.
- Nanima Homestead, Stables and other outbuildings will be significantly affected by noise, possibly to the point of being uninhabitable or unusable.
- The EA shows that the power station cannot comply with DECC guidelines for noise and this effect cannot be mitigated so that it does comply.

- The turbines will be heard 4 kilometres away; these will echo up the river, which the town is situated on.
- Most noise will generate from the top of the stacks. ERM has stated that they expect the power station to operate in the early morning and early evening — times that, due to atmospheric conditions, will benefit noise travel.

Submission No. 1, 2, 3, 4, 5, 6, 7

Response

ERM Power acknowledges that the noise modelling undertaken for operation of the power station predicts exceedances of the noise goals at some sensitive receptors.

As explained in detail in Section 7.1 of Technical Paper 3 and summarised in Section 9.3.2 of the Environmental Assessment, noise propagation modelling software was used to assess potential noise impacts for key noise generating sources associated with the power station. The modelling was based on a range of geographical, meteorological, technical and operational factors. Operational noise levels at sensitive receptors were predicted for neutral and adverse meteorological conditions. For both, the assessment was undertaken for the worst-case 15-minute period of the day with all generating plant running. As such, this provided an indication of the worst-case noise levels that would be expected during those two different meteorological conditions.

Section 7.2 of Technical Paper 3 identified the key operational noise sources used in the noise propagation modelling to predict the noise levels associated with operation of the power station. Table 7-1 in this section lists these noise sources and identifies that technological noise mitigation features are used wherever possible:

- exhaust stack with absorption silencer
- fin fan coolers — low noise design
- diffuser with acoustic enclosure
- transformers — low noise design
- inlet air filter house with absorptive silencer area source.

ERM Power confirms that it has selected the best available and economically feasible technology for the acoustic design of Wellington power station, such that the noise emitted from these key noise sources would be minimised as much as possible.

The noise assessment predicted a potential exceedance of 1–3.5 dB(A) (neutral–adverse) at Mount Nanima; a potential exceedance of 2 dB(A) under adverse meteorological conditions at Keston Rose Garden Cafe; and a potential exceedance of 8–9.5 dB(A) (neutral–adverse) at Nanima House. ERM Power has committed to implementing noise management measures at Mount Nanima and Keston Rose Garden Cafe to ameliorate the predicted noise impacts (see Section 9.3.7 of the Environmental Assessment and draft SoCs N7–N10).

Issues relating to Nanima House are addressed in Section 4.23.

Construction noise has been addressed in Section 4.12.7.

As indicated on Figure 9-7 of the Environmental Assessment, the noise levels from the power station are predicted to reduce to less than 25 dB(A) (under neutral meteorological conditions) by the time they reach the Macquarie River. This low level of noise impact would not be expected to result in any 'echoing' of power station noise up the river. Adverse impacts in the township are not expected.

(b) Issue description

- We do not live our lives inside our homes; our lifestyle and business is very much focussed on outdoor activities on the farm. The noise from the power station will have a significant negative impact on health, life and enjoyment of rural properties.
- The properties most affected are small holdings or hobby farms so that their entire property will be affected, not just the area where their house stands.
- Landholders where noise exceeds Australian standards have been told 'bad luck'.
- The noise would be very annoying.
- The power station is going to affect our residents with noise.
- Disagree with the Wellington power station because of noise impacts.
- There will be excessive noise while operational.
- The noise caused by the power station will be a terrible problem to Wellington and surrounding areas.

  Submission No. 3, 5, 7, 11, 14, 15, 16, 17, 18, 22, 27, 38

Response

These submissions are noted.

ERM Power recognises that some noise impact on sensitive receptors may occur. ERM Power has committed to utilising best-available technology at the power station as well as implementing comprehensive best practice noise management measures. ERM Power is aware of the concerns of all landowners and is aiming to achieve a satisfactory outcome for nearby residents affected by exceedances of noise goals. ERM Power has consulted with affected landowners throughout the process and is committed to achieving the best possible environmental, social and economic outcomes.

(c) Issue description

- The assessment states that the turbines will have a start-up noise of 45 dB and a running noise of 35 dB. Within 1 kilometre of the power station (at Cadonia Estate), the ambient noise level is 21-26 dB. With sound measurement, each 4 dB increase is actually doubling of the sound. So at Cadonia Estate the ambient noise will be 2.5 times louder than present.

  Submission No. 1, 2, 4

Response

ERM Power rejects the notion that the noise at Cadonia Estate will be 2.5 times louder than present.

The respondent's reference to 45 dB(A) at start-up is not clear. The respondent may be thinking of an auxiliary diesel motor often used to start smaller gas-fired turbines. The proposed power plant is started through motoring the generator and maximum noise levels occur at the maximum level of output.

Every 3 dB increase is a theoretical doubling of sound energy. The increase in noise energy present is separate to the perception of noise impact or 'loudness'. The (INP) provides a framework for reconciling potential noise impacts with consideration to existing background noise levels and land uses. At Cadonia Estate, the proposal was found to comply with the adopted noise design goals (established in accordance with the INP).

4.12.4 Comparison with plane noise

Issue description

- The noise will be the same as three jet engine planes.
- The noise will be as loud as a jet engine.
- I hear the power station is meant to make the noise of a large aeroplane and that the some sensitive receptors were told that there was nothing that could be done about the noise. They own a heritage house and farm that has been in their family for generations.

  Submission No. 21, 25, 28, 57

Response

ERM Power rejects the assertion that the noise from the power station will be as load as a jet engine.

Noise emitted from the power station differs to noise received from the power station. Received noise levels (noise impacts) will not be as loud as a jet engine. A noise level of 40 dB(A) is typical of a living room or unoccupied private office. A noise level of 50 dB(A) (higher than any predicted level of noise impact) is typically equivalent to being at a distance of 3 metres from a standard dishwasher.

At the community information sessions, typical, everyday noise levels were provided on a chart for comparison with the noise emissions predicted from the proposed power station. These charts identified that:

- the noise from a jet taking off, measured 100 metres away, is approximately 120 dB
- the noise from a jet engine, measured 25 metres away, is approximately 140 dB.

Also at the information sessions, the noise emissions predicted from the power station were visually presented on a noise isopleth diagram. This provided a colour-coded representation of the noise levels predicted to occur in proximity of the power station, and indicated that the worst noise level to be experienced at a sensitive receptor would be only approximately one-third of that emitted from a jet engine.

The predicted noise impact on Nanima House is discussed in more detail in Section 4.23.

4.12.5 Removal of noise buffers

Issue description

- The EA proposes to remove 20 well-established white box trees. This may lower the noise buffers.
- Concerned about the removal of vegetation that may provide some relief from noise impacts.

  Submission No. 6, 12

Response

The removal of vegetation would not have any influence on the transmission of noise, as vegetation is ineffective at mitigating noise.

4.12.6 Health effects

Issue description

- I don't want people's hearing to be affected by something that can be avoided.

  Submission No. 56

Response

ERM Power rejects the assertion that people's hearing will be affected by the operation of the power station.

The noise levels predicted to occur in the areas surrounding the power station would not affect people's hearing. The Australian Safety and Compensation Council sets a safe maximum exposure level of 85 dB (A-weighted) averaged over an 8-hour period and a maximum of 140 dB (C-weighted) (Australian Government 2000). As can be seen in Figure 9-7 of the Environmental Assessment, the noise levels at the boundary of the site would be well below this level.

4.12.7 Project risk

(a) Issue description

- On page 38 of Technical Paper 3 it is stated that mitigation measures such as screening and fencing are likely to have a negligible impact on construction noise levels. The mitigation strategies identified during construction will not reduce the noise levels to an acceptable level.

  The above statement conflicts with Table 8-1, which only lists noise during construction as a medium risk and the outcome of mitigation strategies as resulting in low risk. The fact is that there are no mitigating strategies to reduce noise levels at Mount Nanima and Nanima House and, therefore, the overall project risk after mitigation should remain high.

  Submission No. 5

Response

Section 6.4 of Technical Paper 3 explains that "for the purpose of this assessment, construction noise sources have been assumed to be constant rather than intermittent". Section 6.4 of the report goes on to explain that the "construction noise impact assessment has been undertaken for the worst-case 15-minute period assuming all required plant in operation with representative percentage on-times". In reality, not all construction equipment would be operated at the same time; nor would it be operated continuously or at the assumed sound power emission levels. The construction noise assessment undertaken represents the worst case conditions during the most intensive periods of construction.

It is acknowledged in the mitigation measures recommended on page 38 of Technical Paper 3 that screening and fencing would be unlikely to reduce construction noise levels from the power station. This is due to the elevation of the receptors in relation to the noise source. However, ERM Power has committed to a range of other mitigation measures that would minimise the impacts of construction noise from the power station (see Section 9.3.7 of the Environmental Assessment), including:

- consideration of noise emissions when selecting construction plant and equipment
- encouraging a general staff attitude to reduce noise emissions
- notification to affected residents of the general construction methods, duration and timing of events, especially for particularly noisy activities
- adhering to construction working hours
- undertaking all construction activities in accordance with *AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites*.

Through implementation of these mitigation measures, ERM Power is confident that the construction noise can be effectively managed such that the overall risk for this aspect would be low. On that basis, ERM Power maintains that the statement referred to in this submission is not in conflict with Table 8-1.

(b) Issue description

- Page 39 of Technical Paper 3 states that "compliance with INP noise goals through the application of on-site noise mitigation measures alone is not feasible, due to technology constraints".

  The initial project risk in Table 8-1 [of the EA] is rated high. The overall project risk after mitigation does not alter the level of noise and should also remain high.

  Submission No. 5

Response

It is acknowledged that operation of the power station has the potential to result in received noise levels above the noise design goals established in accordance with the INP (at some receivers). Section 4.12.3 has discussed that ERM Power has applied all reasonable and feasible measures on-site, by selecting the acoustic design of the power station to achieve the lowest possible noise emissions from key noise sources. Achieving further control of noise through the application of other on-site noise mitigation measures, such as complete stack enclosure, increased stack silencer baffles and on-site noise walls is not possible due

to technology constraints and the fact that one of the key noise sources is the tip of the exhaust stacks. However, as discussed in Section 10.2 of Technical Paper 3 and Section 9.3.7 of the Environmental Assessment, it may be possible to implement off-site (at-receiver) noise mitigation measures to reduce the received level of operational noise.

4.12.8 Data source

Issue description

- The information used to predict weather conditions is based on Dubbo and Mudgee weather stations. These towns are 45 kilometres and 100 kilometres respectively away from Wellington. Wellington does not have a weather station and the climatic conditions of the valley are very different from the locations the predictions are based on.

  Submission No. 23, 57

Response

ERM Power disagrees with this submission.

It is acknowledged that the analysis of regional wind enhancing noise conditions was undertaken for the assessment using wind speed data from the BOM Dubbo station (065070). Although there is a BOM station at Wellington (065034), it did not provide all the information required for this assessment.

As outlined in Section 9.2 of Technical Paper 3, an assessment was undertaken to determine the presence of gradient wind flows and the occurrence of temperature gradients in the study area. The Wellington BOM station did provide sufficient information for this assessment, in the form of cloud cover data. This data confirmed the presence of temperature inversion conditions, as suspected and as indicated by the community during preparation of the Environmental Assessment.

Therefore, while it is recognised that wind speed data from Wellington itself would have been preferable, ERM Power considers that the use of the Dubbo data was appropriate in this instance, given it was used in association with information obtained from Wellington to determine the noise enhancing conditions of the area's meteorology.

It is noted that the DECC did not raise any concerns in its submission relating to the data source.

4.12.9 Mitigation measures

(a) Issue description

- It is recommended that you reassess the other noise mitigation strategies listed on Table 10-1 [of Technical Paper 3], which have all been rejected by the proponent.

  Submission No. 6

Response

The viability of all options in Table 10-1 of Technical Paper 3 were considered based on the principles of best management practice and best available technology economically

achievable. In doing so, ERM Power is committing to implement these principles; this is reflected in Section 10.2.1 of Technical Paper 3, which identifies that the Siemens gas-turbine model used for the environmental assessments is one of the best currently available on the world market. Further, ERM Power has committed to ensure that the performance of the final gas-turbine model selected, if different to that used in the assessment, will achieve (if not better) the environmental criteria set out in the Environmental Assessment. Reassessing many of the options in Table 10-1 would not alter their feasibility or viability, as many of them are considered neither feasible nor viable because of technology constraints (as addressed in Section 4.12.3) or because they would result in a reduction in performance and efficiency.

In reviewing Table 10-1 to address this submission, a transcription error was brought to attention: four cells in Techniques 8 and 9 were inadvertently transposed. This has been corrected and is provided in Section 6.3.

In reviewing the options for management of the potential noise impacts at Nanima House, a detailed assessment of the viability of Technique 8 — Noise barrier at receptor — has determined that this technique is viable, subject to the owner's permission. This issue is addressed in Section 4.23.

(b) Issue description

- The noise impact on Nanima House and its outbuildings may be lessened by the construction of: a new roof (fully lined and baffled on the homestead, stables and washroom); air conditioning of the whole house and washroom; double glazing of the whole house; adequate monetary compensation as it is unlikely I will be unable to continue running stud horses and cattle on the property; sound barriers around the house, stables, yards and washroom.

  Submission No. 6

Response

Amelioration at residential properties is discussed in Table 10-1 of Technical Paper 3. Each proposal to implement acoustic treatments at sensitive receptors would be assessed on a case-by-case basis in consultation with the property owner. ERM Power acknowledges that the cost to implement such treatments would be dependent on a number of discrete and independent factors.

Issues relating to Nanima House are addressed in Section 4.23

4.13 Visual impact

4.13.1 Exhaust stacks

(a) Issue description

- The 35-metre stacks will be visible from many parts of town.
- Disagree with the Wellington power station because of the visual impacts.
- Glenbrae [Twelve Mile Road, Cadonia Estate] will have direct line of sight contact with the exhaust stacks.
- Visually, the power station will be a disgusting eye sore. I don't think it would matter what colour you painted the stacks, 10-metre stacks don't 'blend in' to the environment.
- The towers look bad.

Submission No. 1, 2, 4, 7, 11, 12, 18, 21

Response

The visual impact assessment has identified that the exhaust stacks would be visible from some parts of the Wellington township. However, given the considerable distance between the township and the site, and the undulating landscape around the power station, ERM Power does not believe a considerable visual impact would be experienced.

ERM Power acknowledges that the exhaust stacks would not 'blend in' to the environment from all viewing locations. However, ERM Power does maintain that the undulating nature of the surrounding landscape would assist in mitigating the visual impact of the exhaust stacks from many locations. There are very few locations where any part of the power station would be visible above the horizon.

As part of the visual assessment, a photomontage was prepared from a property at the Cadonia Estate that was determined to most likely view the power station site. This property was one of the most elevated in the estate. A photomontage was prepared from this location, which determined that no views to the power station site would be expected. Given the Glenbrae property is situated at a lower elevation, no views to the power station from this property would be expected.

(b) Issue description

- I was told that we may see occasional puffs of water vapour from the stacks, but was not clarified what was meant by 'occasional puffs' (i.e. how big might these 'puffs' be and how often should we expect them to appear? I seek more clarification please.

Submission No. 60

Response

As part of the shut down sequence a small volume of water is injected into the turbine to clean the turbine blades. The water is of the highest quality and immediately vaporises and

is evidenced as a puff of steam leaving the exhaust stacks. Consistent with the operational regime of the turbines a puff of steam would be seen after each operation.

4.13.2 Assessment methodology and findings

(a) Issue description

- The photomontage refers to the location of a crane. The crane was in wrong spot. The project will be on the Nanima side of the existing substation, not the Mount Nanima side.

  Submission No. 6

Response

This submission is incorrect. GPS coordinates, as well as reference to aerial photography and the proposed layout, were used to accurately locate the crane in the position of the third stack (from north to south).

(b) Issue description

- It appears clear that there will be significant impacts on the visual catchments of both Keston and Nanima. These impacts are not acknowledged with the assessment provided in Technical Paper 5 nor within the mitigation measures.

  The paper does not refer to the standard assessment method established by the NSW Heritage Branch for analysing visual impacts on heritage items. Limited assessments using a single crane and views from isolated points within the Nanima building are not a satisfactory measure of assessment given its heritage listing.

  Submission No. 13

Response

The visual impact assessment undertaken for the heritage-listed Keston Homestead (also known as Bella Vista) predicted that some views of the top third of the exhaust stacks would be experienced, and that some views of the power station would be experienced from the heritage-listed Nanima House. The mitigation measures (landscape planting) proposed for these sites are expected to successfully screen views of the power station. Accordingly, the visual impact on the heritage significance of these property would be not be significant, and not sufficient to warrant assessment under the specific terms of the NSW Heritage Office guidelines. ERM Power has committed, in the mitigation measures, to determine the type and style of off-site planting in consultation with the affected property owners. This would ensure that the most effective outcomes are achieved. The SoCs have been revised to emphasise this commitment (see Appendix B).

As explained in Technical Paper 5, the crane was just one of a number of mechanisms used to assess the potential visual impact of the proposed power station. Section 1.0 of the report explains that, prior to the crane exercise, a desktop analysis was undertaken using aerial photography and topographic information to identify those receptors most likely to be visually affected by the power station. While on-site, the crane was used to further assess this potential impact by providing a reference point for the project site. For those receptors from which the crane could be seen, where it was suspected that one or more of the stacks would be seen, photomontages were created. These provided an effective representation of what

could visually be expected from these receptors (see Section 9.4.1 of the Environmental Assessment for a detailed explanation of the method used to create the photomontages).

ERM Power believes that the use of the crane on-site was an effective means of providing the public with an early understanding of the visual impact expected from the power station, particularly given the difficulty in practically representing the dimensions of the exhaust stacks.

(c) Issue description

- The photomontage in the visual impact assessment demonstrates that all four stacks of the power station are partially visible from the verandah of Nanima House. It was noted that the location on the verandah was not an outdoor entertainment area and there were no windows from the house taking advantage of this view point. This is untrue. The photomontage shows a swing and bird aviary on the left, and a cubby house on the right. This area is often used as a barbeque area and has been used as an outdoor entertainment area as it is shaded; during winter it catches the midday sun. Each of the four bedrooms on this side of the house opens onto the verandah with windows that can be lifted up.

  Submission No. 6

Response

When the visual assessment was conducted, the specialists visited the Nanima House property. At this time, it was noted that the outdoor area of reference, from which the proposed power station would be seen, contained no outdoor entertainment furniture. It was further noted that the rooms on this side of the house were not dedicated entertaining areas (i.e. dining room and lounge room), but bedrooms. Based on these observations, the visual specialists concluded that the area of reference did not appear to be an actively used entertaining part of the house or property.

The information provided in the submission that this area is often used as a barbeque area and outdoor entertainment area is acknowledged.

ERM Power is confident that the mitigation measures identified in Section 9.4.4 of the Environmental Assessment regarding landscape planting on-site at the power station and off-site at Nanima House (and SoC V2 to undertake this) would effectively screen the verandah and outdoor area from views to the proposed power station.

The implications and proposed/agreed solutions for Nanima House in relation to the predicted noise impact are addressed in Section 4.23.

(d) Issue description

- The Resolve Planning report states that the crane was visible from the entrance of Mount Nanima and as such, the stacks will also form part of the visual disruption on approach and departure from the property. However, the report does not mention that: Mount Nanima is neighbouring the site due to elevation and topography with a 60% view; the driveway is less than 400 metres from the site; the stacks will be visible from Farm Stay Cottage; and the stacks visible from north-western yard area of the homestead.

- Insufficient mitigation measures identified for Mount Nanima (plant one row of trees along driveway). This is not acceptable to the property owner because: there is insufficient room to plant trees along the fenceline as it is in a grazing paddock and would require trees to be fenced off; this would encroach on the driveway, which requires heavy duty vehicular access for stock transport; one row of trees will have no visual impact on a 35-metre high stack (usually a minimum of three trees and dense understorey is required); it will take 10–15 years for the trees to grow to a substantial height; tree planting under the TransGrid transmission lines will not be allowed by TransGrid.

  It is recommended that more substantial mitigation measures are implemented to prevent the compounding effect on the Mount Nanima property. This would include dense vegetation plantings on the TransGrid site adjoining the Mount Nanima property and also dense vegetation plantings on the ridge and boundary on the proponent's land adjacent to the Mount Nanima property. This is required to provide a buffer zone, which currently does not exist.

  Submission No. 5

Response

The visual assessment report has determined that the power station would not be visible from the Mount Namina residence. The proponent acknowledges that there would be views of the power station from parts of the submitter's farm and transient views when travelling to and from the homestead along the access road.

The comments regarding the limitations associated with landscape plantings along the fenceline of the Mount Nanima property, adjacent to the driveway, are noted, as are the comments relating to other aspects of the property from which views to the power station are predicted. ERM Power has committed to consult with the residents/owners of sensitive receptors to determine the type and style of off-site planting and other mitigation measures, to ensure the most effective visual mitigation outcomes. This consultation would consider any issues raised by property owners regarding views to the power station that were not anticipated in the report, which would best be done during construction of the project, and particularly once the exhaust stacks have been installed.

ERM Power has already committed to consult with TransGrid regarding landscape plantings on other areas of its land. ERM Power would extend this consultation to include discussions regarding plantings adjacent to the Mount Nanima driveway. ERM Power would also assess the effectiveness of landscape plantings around the boundaries of its own property.

The SoCs have been revised to include a commitment specifically relating to consultation with property owners (see Appendix B).

4.13.3 Removal of visual buffers

Issue description

- The EA proposes to remove 20 well-established white box trees. This is not reflected in the photomontage and may create an adverse visual impact.

- Concerned about the removal of vegetation that may provide some relief from visual impacts.

  Submission No. 6, 12

Response

It is acknowledged that construction of the proposed power station would require the removal of approximately 20 scattered paddock trees. It is also acknowledged that removal of these trees may result in some visual impacts during the early stages of operation. However, as indicated in Sections 9.4.4 and 9.5.3 of the Environmental Assessment, clearance of paddock trees within the construction carpark and laydown area would be minimised as far as possible, thus reducing the loss of natural visual barriers. Furthermore, the landscape planting that would be undertaken on the power station site would, once established and for the duration of the power station's operation, restore any visual barriers that would be removed with the cleared paddock trees.

4.14 Biodiversity

4.14.1 Impact on biodiversity

Issue description

- Contaminants will reach the Western Plains and Macquarie marshes via the Macquarie River.
- Gases produced by the power station could affect animals.
- The extra 98,000 tonnes of carbon dioxide released into Wellington's atmosphere could affect Wellington's unadapted plants and animals.
- The project will impact on animals.

  Submission No. 1, 2, 4, 16, 32, 34, 39

Response

The community concerns raised about the air emissions and potential health impacts from operation of the power station have been addressed in Sections 4.11.1–4.11.5. The findings of the air quality impact assessment concluded that emissions of all parameters from operation of the power station are predicted to be well within the adopted limits and, as such, minimal impact on air quality is expected. These conclusions can be correlated to plants and animals — no impacts due to air quality would be expected.

The potential physical impact on biodiversity (e.g. due to loss of habitat or mortality) has been thoroughly addressed in Technical Paper 1 and summarised in Section 9.5 of the Environmental Assessment. The assessment concluded that the project is unlikely to result in a significant impact to any ecological community or species, particularly given the mitigation measures and commitments that would be implemented by ERM Power. These are further addressed below.

4.14.2 Habitat removal

(a) Issue description

- The pipeline cuts through a national park and requires a 33-metre trench to be dug to lay a 1-metre wide pipe. Why would they need to destroy that much land to lay this pipeline?

  Submission No. 48

Response

In the Environmental Assessment, the pipeline route through Goobang National Park is proposed to follow the alignment of the Peak Hill–Baldry Road (MR 234), which is outside the park boundary. This alignment would minimise the extent of clearing and access required. The issues relating to this proposed alignment have been addressed in Section 4.25.3 (issue (b)).

The issue raised regarding the construction corridor width has been addressed in Section 4.25.3 (issue (d)).

(b) Issue description

- The EA proposes to remove 20 well-established white box trees. This may provide less habitat for already threatened wildlife.

  Submission No. 6

Response

A comprehensive biodiversity assessment was undertaken for the project; this is provided in Technical Paper 1 and summarised in Section 9.5 of the Environmental Assessment. The biodiversity assessment considered the potential impacts on biodiversity (including threatened wildlife) of construction and operation of the project as they related to:

- clearing of native vegetation and disturbed habitats
- habitat fragmentation and edge effects
- direct mortality of plants and less mobile animals
- weed and pest species
- noise
- cumulative impacts.

Impact assessments were also completed for all species, populations and communities listed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC ACT), *Threatened Species Conservation Act 1995* (TSC) and *Fisheries Management Act 1994* (FM ACT) known or with the potential to occur in the study area.

The assessment concluded that, given the small scale of impacts of the project relative to the availability of similar habitat in local and regional area, the significance assessments indicated that the project is unlikely to have a significant impact on any endangered ecological communities, or threatened species of plant or animal.

Following on from the meeting held with the DECC on 16 July 2008 to discuss biodiversity issues raised in the DECC submission (see Section 2.2.3), further correspondence was

received from the DECC regarding the flora survey undertaken and vegetation mapping produced for the biodiversity assessment. The DECC believed that:

- the survey underestimated the amount of Box Gum Woodland Endangered Ecological Community (EEC) to be disturbed by the project due to a misinterpretation of one of the steps in the DECC's key for identifying Box Gum Woodland EEC
- Inland Grey-box Woodland EEC may be present in the study area but was not identified or assessed
- the targeted survey did not demonstrate that all species with potential to occur in the study area were searched for (particularly *Pomoderris queenslandica* and *Dicanthium setosum*).

Consideration of these issues raised by PB's biodiversity specialists, and further discussion with the DECC has identified the following:

- The misinterpreted step in the key for identifying Box Gum Woodland EEC relates to classifying vegetation as the EEC if 'vegetation, either understorey or overstorey or both, would, under appropriate management, respond to assisted natural regeneration, such as where the natural soil and associated seed bank are still at least partially intact'. It was agreed that, reclassifying these 'poor condition' sites as patches of EEC would have little impact on the outcomes for the project. This will be further resolved through development of the biodiversity offset strategy (see Section 4.25.3).
- Discussions with the DECC indicated that Inland Grey-box Woodland EEC may not be present within the study area. Existing, published vegetation mapping of the EEC has been sought from the DECC. Once received, the mapping will be reviewed to determine potential impacts; any necessary management measures will be implemented through the CEMP and biodiversity offset strategy (see Section 4.25.3).
- *Pomaderris queenslandica* is a conspicuous shrub species, so despite the record not showing up on the DECC's database because it is a restricted species, the biodiversity specialists are confident that any plants would have been identified during the targeted survey.
- *Dicanthium setosum* is most likely to be detected in late summer. It is unlikely to be detected in paddocks, even if present, as it would be grazed. Seasonal surveys would only be required for this species if there are patches of habitat outside of the paddocks that would be impacted by construction of the pipeline. This would be addressed during detailed design of the pipeline.

The mitigation measures identified in the biodiversity assessment and Section 9.5.3 of the Environmental Assessment, and the revised SoCs (see Appendix B), would further minimise the impact of the project on threatened species, populations and communities.

4.14.3 Aquatic habitats

(a) Issue description

- The EA fails to recognise the highly sensitive nature of aquatic habitats within study area.

- The EA is mostly comprehensive and addresses much of the assessment and ameliorative actions required of such a project. However, it is lacking in areas important to the DPI with regards to impacts on aquatic habitat and aquatic threatened species.
- The EA is silent on all matters relating to FM Act, and listed species, populations and communities contained therein.
- Several areas of high conservation value from a fisheries perspective have not been identified nor considered when assessing the impact on aquatic habitat.

  Submission No. 8A

Response

Section 2.4.4 of Technical Paper 1 describes the methodology used to assess aquatic habitat in the study area. It indicates that the assessment was undertaken in accordance with the relevant NSW Fisheries policy and guidelines (Fairfull and Witheridge 2003). Section 3.4.2 of Technical Paper 1 identifies the four major waterways intersected by the proposed gas pipeline and discusses their fish habitat classification in accordance with the guidelines referred to above. This section also discusses the condition of these aquatic habitats where the pipeline intersects. This information is summarised in Section 3.6.3 of the Environmental Assessment. As such, although it is recognised that the Environmental Assessment does not specifically recognise the highly sensitive nature of aquatic habitats, it does recognise the importance of these habitats for aquatic species.

ERM Power has committed to addressing the sensitive nature of these habitats by providing management measures in the CEMP that address the key threatening processes to these aquatic habitats (see Section 4.14.4). Furthermore, sensitive watercourses would be protected through the use of directional drilling of the pipeline at these locations (see Section 4.7.5).

(b) Issue description

- The EA only mentions two threatened fish species — the Trout Cod and the Olive Perchlet. The EA incorrectly lists these in the *TSC Act*.

  The Olive Perchlet is listed under Schedule 4, Part 2 (Endangered populations) of the FM Act. It has been sampled in the Bogan River system as recently as January 2008 and, as such, the proposal has a high probability of impacting on the habitat of this species.

  Trout Cod has resident populations between Wellington and Dubbo and, most possibly the Little River; both reaches are part of this study area. Trout Cod is listed under Schedule 4, Part 1 (Endangered species) of the FM Act. The proposal will impact on the habitat of this species.

  Submission No. 8A

Response

Table 3-8 of the Environmental Assessment identifies that the Trout Cod is listed as endangered (E) under state legislation. The notes for this table explain that "E1 and E = Endangered (TSC Act and *Fisheries Management Act 1994*)". ERM Power acknowledges that the way this information is represented could be interpreted as the Trout Cod being

listed under the TSC Act. The notes for this table have been amended to explain that E1 relates specifically to the TSC Act and E relates specifically to the FM Act (see Section 6.4).

ERM Power acknowledges that Table 7-1 of Technical Paper 1 incorrectly lists the Trout Cod as endangered under the TSC Act. This table has been amended to reflect its listing under the FM Act (see Section 6.5).

ERM Power acknowledges that Chapter E16 of Appendix E in Technical Paper 1 incorrectly lists the Trout Cod as endangered under the TSC Act. This section has been amended to reflect its listing under the FM Act (see Section 6.6).

The significance assessment for the Trout Cod (Section E16 of Appendix E in Technical Paper 1) recognises that habitat for this species exists in the Macquarie River. It identifies that directional drilling will be used to construct the pipeline across the Macquarie River, which would preserve the habitat for the Trout Cod. ERM Power acknowledges the DPI's comment that the Trout Cod is also likely to occur in the Little River. Section 4.7.5 responds to concerns raised regarding the need to directionally drill under the Little River to protect this sensitive environment. ERM Power has committed to this undertaking (see revised SoCs in Appendix B), which will, therefore, protect any aquatic habitat for the Trout Cod in the Little River.

ERM Power acknowledges that the Olive Perchlet is incorrectly listed as an endangered population under the TSC Act instead of the FM Act in Section 4.1.3 of Technical Paper 1. The information provided regarding the sampling of the Olive Perchlet in the Bogan River system is appreciated.

Investigations into the Bogan River system have resulted in the understanding that Burrill Creek and Burrandong Creek are part of this larger river system. These two watercourses are crossed by the western end of the proposed pipeline route, approximately 5 and 10 kilometres from the compressor station, respectively. Pipeline crossings across watercourses that are part of the Bogan River system would be paid particular attention during the detailed design phase to assess whether the aquatic habitat of the Olive Perchlet has the potential to be impacted; directional drilling would be used if determined to be required. ERM Power has revised the SoCs to reflect this commitment (see Appendix B).

It is noted that on the DECC's website, the threatened species profiles for these two species lists them as being protected under the TSC Act. While a link to the FM Act is provided on the page describing the threatened species ratings under the TSC Act, no information are provided that explains which species are listed under the FM Act.

(c) Issue description

- Populations of Silver Perch (listed under Schedule 5 (Vulnerable species) of the FM Act) are found in the Macquarie River within the study area. The proposal will impact on the habitat of this species.

  Submission No. 8A

Response

Directional drilling would be used to construct the pipeline across the Macquarie River, as committed to in the EA. This is a non-disruptive technique that would successfully avoid any impact on the aquatic habitat of the Silver Perch.

(d) Issue description

- The last remaining naturally-occurring population in central western NSW of the Purple-spotted Gudgeon (listed under Schedule 4, Part 2 (Endangered populations) of the FM Act) is found approximately 15 kilometres upstream of the power station site. The proposal will impact on the habitat of this species.

  Submission No. 8A

Response

Construction of the pipeline across all waterways would be undertaken in a manner that minimises impacts on their aquatic habitats. Across major waterways (particularly the Macquarie River, Little River and Buckinbah Creek), ERM Power has committed to use directional drilling (see Section 4.7.5). This would also be used across environmentally sensitive areas identified during the detailed design phase (when the final pipeline alignment is pegged out on-site). Management measures implemented through the CEMP would seek to minimise impacts on the environment during both open-cut trenching and directional drilling.

Pipeline crossings in the vicinity of the power station site would be paid particular attention during the detailed design phase to assess whether the aquatic habitat of the Purple-spotted Gudgeon has the potential to be impacted; directional drilling would be used if determined to be required. ERM Power has revised the SoCs to reflect this commitment (see Appendix B).

(e) Issue description

- The Macquarie River, Little River and Buckinbah Creek are all listed as EECs under Schedule 4, Part 3 of the FM Act.

  Submission No. 8A

Response

Noted.

ERM Power has committed to using directional drilling across these waterways, which would protect these ecological communities (see Sections 4.7.5).

(f) Issue description

- The Murray Cod is nationally listed as vulnerable under the EPBC Act.

  Submission No. 8A

Response

Noted and agreed.

Table D-1 in Appendix D of Technical Paper 1 lists the Murray Cod as vulnerable under the EPBC Act. The biodiversity assessment concluded that there is no suitable habitat in the study area for this species.

(g) Issue description

- The project would have considerable impact on sensitive waterways during and after pipeline construction. Damage to threatened species habitat and fish kills can occur if these impacts are not addressed and mitigated at construction sites.

  Submission No. 8A

Response

It is acknowledged that pipeline construction could have considerable impact on sensitive waterways during and after construction if appropriate mitigation and management measures were not implemented during construction. The mitigation measures identified in Sections 9.5.3 and 10.6.4 of the Environmental Assessment (and reflected in the SoCs) would be implemented to minimise impacts on threatened aquatic species and their habitat. These measures would be implemented through the CEMP as committed to in SoCs B3 and SW1.

(h) Issue description

- The EA describes the Little River as moderate fish habitat. This is incorrect. The Little River has one of the highest value aquatic habitats of all waterways within the central west. It is recommended that any considerations that are given to the Macquarie River should also be given to the Little River with regards to directional drilling.

  Submission No. 8A

Response

Noted and agreed.

Section 4.7.5 responds to concerns raised regarding the need to directionally drill under the Little River to protect this sensitive environment. As recommended, directional drilling would be undertaken at this location (see revised SoCs in Appendix B).

4.14.4 Key threatening processes

Issue description

- Key threatening processes listed under Schedule 6 of the FM Act were not included in the EA (degradation of native vegetation along watercourses; installation and operation of in-stream structures and other mechanisms that alter natural flow regimes; removal of large woody debris from rivers and streams). Construction can impact all these processes. Conditions of Approval relating to this need to be incorporated into the development consent.

  Submission No. 8A

Response

Noted and agreed.

The SoCs have been revised to reflect this. A commitment has been included that the CEMP will provide management measures to ensure the key threatening processes listed in Schedule 6 of the FM Act would be addressed (see Appendix B).

4.14.5 Waterway management

Issue description

- The Macquarie River has high conservation value to the DPI. The soil and water management plan needs to address all possible impacts on this waterway.

  Submission No. 8A

Response

Noted and agreed.

4.15 Aboriginal heritage

4.15.1 Assessment methodology

(a) Issue description

- Concerns regarding the potential impacts of the project on Aboriginal cultural heritage.

  Submission No. 12

Response

Noted.

The mitigation measures proposed in the Environmental Assessment, and committed to in the SoCs would effectively protect and/or manage any items or sites of Aboriginal heritage significance that may be affected by the project. The DECC has requested amendments and additions to the SoCs relating to Aboriginal heritage; these are addressed in Section 4.25.4.

(b) Issue description

- The EA report states that the alternative routes (being routes A and B as shown on Figure 6.3, page 111) were dismissed. The GAC consider that Figure 6.3 is incorrect. The green dotted line that should show route A is actually the proposed pipeline route shown in solid red. The dotted purple line is the route known as route B, as proposed in December 2007. It was route B that was surveyed as part of the Aboriginal cultural heritage assessment. At the public open day, it was confirmed that the proposed route is now to be along what was originally known as route A. The GAC is concerned that no cultural heritage assessment, Aboriginal or otherwise, was undertaken along the alternative pipeline route A, which appears to be the route currently proposed. The GAC considers that there likely to be a number of Aboriginal heritage items along the final pipeline route that will have been missed and not taken into account in the Heritage Assessment Report.
- The GAC submits that there are many more known Aboriginal heritage sites in the Wellington area that have not been recorded and registered to the DECC AHIMS site.
- The GAC has undertaken a study of a small section of the proposed pipeline route at Three Mile Flat, which identified a scarred tree with a scar 2.5 metres long and

60 centimetres wide. This demonstrates that there are items of Aboriginal heritage located in the vicinity of the pipeline.

- Aboriginal people have not surveyed the area from Wellington to Parkes where the gas line will come in.
- A new report must be prepared addressing the impact of the final pipeline route on heritage generally, but particularly in relation to Aboriginal heritage.
- The GAC must be given the opportunity to consider, review and provide a submission in relation to an Aboriginal cultural heritage assessment of the final route of the pipeline.
- The GAC has requested that GAC does an Aboriginal cultural assessment along the pipeline route after it has been fully surveyed and pegged, within a 20-metre buffer zone.

Submission No. 12, 57

Response

The proponent disagrees that Figure 6.3 in the Environmental Assessment is incorrect. Section 4.9 confirms that the solid red line shown on the map is the final proposed gas pipeline route.

ERM Power acknowledges that the incorrect pipeline route (the purple dotted line shown on Figure 6.3) was surveyed in the area of Three Mile Flat, just north of the proposed power station site, for the heritage assessment. However, it is noted that this is only approximately 2 kilometres of the 100 kilometre gas pipeline route, along which only four sites of Aboriginal heritage significance were identified. Furthermore, it is noted that the section of the pipeline route that was not surveyed passes across land that is predominantly cleared and used for agricultural purposes, and runs parallel to a major highway and railway line. As such, the land is likely to be highly disturbed, so archaeological deposits would not be expected. ERM Power recognises that the pipeline in this area runs in close proximity to the Macquarie River, where sites of Aboriginal significance may be located.

ERM Power has revised the SoCs to include a commitment to undertake an Aboriginal heritage survey of the correct pipeline route in the area of Three Mile Flat (see Appendix B). This survey would be undertaken prior to the preparation of the CEMP. It would be undertaken by Aboriginal heritage specialists and Aboriginal stakeholder representatives would be provide the opportunity to participate. The findings of the survey, particularly any mitigation measures required to protect or manage any identified Aboriginal sites/items, would be reported to the DoP and incorporated into the CEMP for the project.

The identification by GAC of a scar tree at Three Mile Flat is noted. Particular attention would be given to this during the assessment of the area.

It is noted that suitably qualified members of the Aboriginal community are able to identify and record Aboriginal heritage items, then forward this information on to the DECC for consideration and reference.

ERM Power has committed in draft SoC AH3 to invite representatives of the Aboriginal groups consulted during the Environmental Assessment to participate in a review of the final pipeline route. This commitment has been maintained in the revised SoCs (see Appendix B).

(c) Issue description

- The Aboriginal Cultural Heritage Assessment only involved viewing major creek crossings along proposed gas pipeline route, drawn from a line on an aerial map. The GAC expected that long sections of the route would be assessed by walking the route; however, this was not done.
- Only nine locations were surveyed over a distance of 30 kilometres. This level of assessment is inadequate given the abundance of Aboriginal cultural heritage in the Wellington region.
- There were no survey markers to indicate the route of the gas pipeline. The GAC was informed that the proponent had allowed a corridor of some 400–500 metres for the pipeline from the line drawn on the aerial plans. The Heritage Assessment Report is inconsistent with GAC's experience, in that it states that "a 200 metre buffer around the proposed pipeline route was assessed and surveyed during the heritage study".

  Submission No. 12

Response

The Aboriginal heritage assessment was undertaken in accordance with the DECC's draft *Guidelines for Aboriginal Heritage Cultural Heritage Impact Assessment and Community Consultation* (DEC 2005), as required by the DGRs. These guidelines stipulate that, prior to commencement of the Aboriginal field surveys, the proposed survey methodology is discussed with the Aboriginal stakeholders to ensure they understand it and are happy with what is proposed.

Due to the length of the proposed gas pipeline route, the results of the predictive model for Aboriginal heritage sites (Section 6.5 of Technical Paper 2) and the high level of disturbance from agricultural practices along the majority of the route, it was determined that the most efficient survey methodology would be to undertake a targeted survey of the proposed pipeline route and buffer zone.

The targeted survey focused on landform types along the proposed pipeline route with the potential to contain Aboriginal heritage sites, and did not survey areas such as sown paddocks, with no ground visibility. This is a standard archaeological methodology for such surveys.

Prior to embarking upon the survey with GAC, over 30 kilometres of the proposed pipeline route had been examined by pedestrian survey with Aboriginal representatives from Peak Hill, confirming the predictive model for the region.

In the weeks prior to the survey taking place and during the initial meeting with representatives of GAC, including the Elders, the proposed methodology was explained and discussed. At no point were any objections raised to the proposed methodology, either before or during the survey. In fact, at several points during the survey, one or more of the Aboriginal participants chose not to leave the vehicle to survey potentially sensitive areas examined by AMBS archaeologists.

Upon completion of the survey, all Aboriginal representatives stated that they approved of the survey methodology, and agreed that an appropriate level of survey for Aboriginal heritage had been undertaken.

The statement that only nine locations were assessed is incorrect. Significantly more than nine locations were examined within the 30 kilometre distance indicated on the map on page 2 of the GAC 2008 Brief Study Report submitted in support of their submission. The entirety of the route indicated was observed, and all significant landforms and sensitive archaeological areas within this distance were examined in detail.

It should be noted that AMBS surveyed approximately 50 kilometres of the proposed gas pipeline route with the GAC, as detailed in Table 7.1 and Figure 7.1 of Technical Paper 2.

The concern regarding the inconsistent representation of the corridor width is noted. However, what is reflected in the report is correct — a 200-metre buffer was assessed and surveyed during the heritage (and biodiversity) study. The inconsistency that GAC has raised does not alter the results of the study. ERM Power has committed in SoC AH1 to consult with Aboriginal heritage specialists if the detailed design phase results in realignment of the pipeline route to anywhere outside of the buffered corridor surveyed during the assessment. Further, ERM Power has committed to providing Aboriginal stakeholder representatives the opportunity to participate in a drive-by survey of the finalised, marked pipeline route to allow confirmation of the final development impact area, prior to construction being undertaken.

(d) Issue description

- The power station site has not been thoroughly checked for Aboriginal artefacts.

  Submission No. 37

Response

ERM Power disagrees with this submission.

The Aboriginal heritage assessment included a survey of the proposed power station site. No Aboriginal sites, objects or places were identified. This finding was not unexpected given the site has been used for agricultural purposes for many, many years. As such, it is already highly disturbed, with very little native vegetation remaining (in the form of scattered paddock trees).

(e) Issue description

- How accurate and how much depth does the study have? I was advised at the consultation day that only two people had looked at it.
- The lack of Aboriginal consultation is very disturbing.
- Only a few Aboriginal people were used to survey the site for significance; a lot more people needed to be consulted.
- Concerns regarding the mechanism and process employed for the survey.

  Submission No. 12, 54, 57

Response

Aboriginal consultation for the project was undertaken in accordance with the DECC's draft *Guidelines for Aboriginal Heritage Cultural Heritage Impact Assessment and Community Consultation*, as required by the DGRs. AMBS made extensive attempts to consult with the various Aboriginal community groups with an interest in the area; little written communication was received. AMBS contacted and attempted to undertake consultation with all groups and individuals who responded to the initial advertisement, and with those who were brought to their attention by a number of government agencies and NGOs. Although AMBS was able to contact Orana Aboriginal Corporation, Wellington LALC and Peak Hill LALC, it was forced to undertake field survey without the presence of all these groups. Several days of field survey had been organised with all three groups, but representatives were unable to be contacted prior to the survey commencing; AMBS's phone calls and messages were unanswered. Representatives of the Bogan River Peak Hill Aboriginal Corporation and GAC participated in the Aboriginal heritage survey.

Upon completion of the Aboriginal heritage assessment, the report was provided to all five Aboriginal stakeholder groups for comment. Only GAC provided feedback; all other groups were again unable to be contacted by phone prior to report finalisation.

ERM Power maintains that the Aboriginal consultation undertaken for the heritage assessment was more than adequate. It went above and beyond that required by the DECC guidelines, in terms of the amount of time provided for comments and the exhaustive attempts made to involve all Aboriginal stakeholders in the survey. An AMBS log of all correspondence and attempted correspondence with Aboriginal stakeholders was provided to the DECC prior to meeting with them on 16 July 2008; the DECC indicated that it was satisfied that sufficient consultation was undertaken with Aboriginal stakeholders.

(f) Issue description

- The GAC disagrees with the conclusion of the heritage report that says no further archaeological ground survey of the study area is required for the current footprint, and that the proponent should consult with appropriate heritage specialists only if the detailed design phase determines that the pipeline corridor is to be realigned beyond the 200 metre survey corridor buffer.

  Submission No. 12

Response

The DECC has requested amendments and additions to the SoCs as they relate to Aboriginal heritage and particularly this matter; they are addressed in Section 4.25.4.

4.15.2 Statement of validity

Issue description

- The EA contains a statement of validity, which includes a declaration that the information contained in the EA is not false or misleading. We consider that the deficiencies in the heritage assessment report may be considered to be false and misleading, and undermine the statement of validity.

  Submission No. 12

Response

ERM Power disagrees with this submission.

This statement of validity states that "to the best of my knowledge, the information contained in the Environmental Assessment is not false or misleading".

The inconsistencies in the Aboriginal survey of the proposed pipeline route in the vicinity of Three Mile Flat have been brought to the attention of ERM Power and the personnel who prepared the Environmental Assessment. Section 4.15 has addressed this issue and ERM Power has committed to survey the correct route for Aboriginal heritage significance prior to preparation of the CEMP. As such, ERM Power maintains that the statement of validity remains valid.

4.16 Hazard and risk

4.16.1 Assessment methodology

Issue description

- Page 226 states that there is potential for significant off-site consequences near the proposed power station and pipeline facilities as a result of gas explosion. As the expected frequency of incidents indicates that risk levels may exceed DoP criteria, a Level 3 assessment was undertaken.

  Submission No. 5

Response

Noted.

4.16.2 Mitigation measures and emergency procedures

Issue description

- Page 123 states that in accordance with NSW emergency response practices, an evacuation zone would be established around the proposed site for emergency events (e.g. 1–2 kilometres).

  A number of neighbouring properties and residents fall within the evacuation zone. To evacuate from Mount Nanima, we would need to travel towards the emergency zone (i.e. within 400 metres) to access the main road. This is not an acceptable situation.

- The EA fails to provide for an adequate fire protection mechanism, particularly if diesel is being stored on-site as a 'back-up'.

- Will gas be stored on site at Wellington? If so, what precautions will be taken to safeguard against an explosion/fire?

- There is no provision in the EA for emergency measures where an emergency situation might occur (i.e. gas explosion).

  Submission No. 5, 6, 10, 12

Response

A preliminary hazard analysis (PHA) was undertaken for the project; this is provided in Technical Paper 6 and summarised in Section 9.7 of the Environmental Assessment. The PHA concluded that the risk levels associated with operation of the project would meet the regulated risk criteria. Furthermore, through the implementation of technical safeguards (e.g. gas and fire detection response systems, appropriate separation distances) and safe operating procedures, and risk management and emergency response procedures, ERM Power is confident that the hazards and risks associated with operation of the project would be effectively mitigated and managed.

Section 7.1.3 of the Environmental Assessment, subheading 'Emergency response', explains that risk management and emergency response procedures would be developed and implemented through the OEMP for the project. These procedures would follow the *National Standard for the Control of Major Hazard Facilities* and would be subject to review by appropriate stakeholders and agencies, particularly NSW WorkCover, NSW Fire Brigades and the Rural Fire Service. These procedures would provide adequate measures to manage emergency situations such as gas explosions and fires.

It is acknowledged that the 1–2 kilometre evacuation zone required for the power station would encompass a number of residential properties. These property owners would be consulted during development of the emergency response procedure to ensure appropriate procedures relating to their properties are carefully addressed and incorporated. ERM Power is confident that the emergency procedure that would be developed would adequately provide for and protect residential property owners; ERM Power does not believe the power station would pose considerable risk to these property owners.

The SoCs have been revised to include a commitment specifically relating to the development of risk management and emergency response procedures.

4.17 Traffic and transport

Issue description

- Our road is dangerous enough without adding excess traffic and smog to the equation.

  Submission No. 11

Response

As identified in Technical Paper 4 and Section 9.2 of the Environmental Assessment, the air quality impact assessment predicted that all air emissions from operation of the power station would be well within the limits set by regulators. The predicted air emissions would not result in smog, so would not pose a risk to traffic in the vicinity of the power station.

Section 10.1 of the Environmental Assessment assesses the potential impact of construction and operational traffic on the surrounding transport infrastructure and the community. The traffic management measures identified in this section, and committed to in SoCs T1–T8 would effectively mitigate any potential impacts as a result of construction and operational traffic.

It is noted that, during operation, a maximum six to eight vehicles would be expected to access the power station site. This would have a negligible impact on the existing road operations in the area or air quality. Vehicles delivering small amounts of hazardous materials to the site would be expected approximately every 6 months during operation. These would be transported by an accredited carrier in accordance with Australian standards. As such, no impact on surrounding traffic would be expected.

4.18 Historic heritage

4.18.1 Assessment methodology

(a) Issue description

- The historic assessment is inadequate.
- The heritage assessment failed to follow the standard accepted practice established by the NSW Heritage Office of completing a Statement of Heritage Impact (SOHI). Therefore, without the accepted process and analysis, the conclusions and recommendations cannot be supported.
- It is recommended that the accepted procedures established by the NSW Heritage Office be utilised to establish the impacts of the heritage significance of the properties. Appropriate engineering and financial data should be provided to support a standard analysis of alternative mitigation measures, in accordance with the SOHI process.
- The heritage element is regarded as being unsatisfactory in failing to utilise appropriate expertise and in failing to acknowledge items of heritage significance within the vicinity of the project.
- It is recommended that appropriate expertise be sought to investigate and establish the heritage significance of the three properties in the vicinity of the proposed power station.

  Submission No. 6, 13

Response

Impact on historic heritage was not identified as a key issue in the DGRs that were issued for the project. Nonetheless, a historic heritage assessment was undertaken for all components of the project (gas pipeline, power station and compressor station).

The historic heritage assessment was undertaken in accordance with current heritage best practice guidelines as identified in the Heritage Office, Department of Planning, documents *NSW Heritage Manual* (NSW Heritage Office 1996), *Archaeological Assessment Guidelines* (1996) and *Assessing Heritage Significance* (2001). The assessment guidelines in these documents are consistent with those identified in the Heritage Office's *Statement of Heritage Impact* (NSW Heritage Office 2008) guidelines, particularly as they relate to reference to the seven criteria used to define heritage significance.

The heritage survey did not identify any heritage items within the pipeline easement or development footprint and no potential heritage items, places or archaeological sites were identified. As such, the assessment of significance was within the context of the historic

themes, cross-referenced to the conforming criteria. The findings of the historic heritage assessment undertaken by AMBS concluded that the proposed development would not have an adverse impact on the two known heritage items in the area surrounding the proposed power station site (Nanima and Keston homesteads). Furthermore, ERM Power considers that the landscape treatments proposed as a result of the visual impact assessment will successfully mitigate any potential visual impacts to the heritage items.

Since exhibition of the Environmental Assessment, developments have occurred such that a noise wall may be developed near Nanima House to manage predicted noise issues at that property. The heritage implications of a potential noise wall are addressed in Section 4.23.

It is noted that the NSW Heritage Office did not raise any concerns relating to the methodology of the historic heritage assessment during the adequacy review period or during public exhibition of the Environmental Assessment.

ERM Power engaged the services of AMBS to conduct heritage assessments for the project. AMBS is considered to be an appropriately qualified specialist firm.

(b) Issue description

- There is no assessment of the impact on Nanima Homestead.
- The heritage study makes no detailed reference to the heritage significance of the three heritage listed properties in the vicinity.
- The Environmental Risk Analysis Table 8-1 is silent on historical heritage and has ignored the impact of construction and operation on Nanima House.
- Section 9.4 fails to identify the presence of historical structures, which is in direct conflict with Section 2.5.3, which identifies Goonoo, Keston and Nanima as historical items under the Wellington LEP, and then goes on to recommend no constraints and no further historic assessment required.
- Sections 10.2.3 and 10.2.4 state that there are no significant historical structures identified, and that impacts on historical heritage are negligible, therefore no mitigation measures are required. This seems to contradict Table S-3 on page xxii, which identifies a key feature of historical heritage as Nanima House, which is registered on the RNE.

  Submission No. 5, 6, 13

Response

Section 2.4 of Technical Paper 2 acknowledges the listing of Nanima House on the Register of the National Estate (RNE), and Section 2.5.3 of the report acknowledges the local heritage listing of Nanima House, Goonoo and Keston in the Wellington Council LEP 1995. It is noted that all RNE listings are in the process of re-assessment, which may result in items being elevated to the National Heritage List or, alternatively, de-listed. As discussed above, the heritage value of these properties is not considered to be affected by the project, particularly given the landscape plantings that would be undertaken to mitigate any potential visual impacts on these homesteads, and the distance (around 700 metres) between the homestead and the project site.

4.18.2 Heritage sites missed

(c) Issue description

- The GAC has undertaken a study of a small section of the proposed pipeline route at Three Mile Flat, which identified a site of a Cobb & Co changing station, and an old foundation site of bricks dated back to 1860. This demonstrates that there are items of non-Aboriginal heritage located in the vicinity of the pipeline.

  Submission No. 12

Response

ERM Power acknowledges that the incorrect pipeline route (the purple dotted line shown on Figure 6-3 in the Environmental Assessment) was surveyed in the area of Three Mile Flat, just north of the proposed power station site.

ERM Power has revised the SoCs to include a commitment to undertake a historic heritage survey of the correct pipeline route in the area of Three Mile Flat (see Appendix B). This survey would be undertaken prior to the preparation of the CEMP. The assessment would consider those historic relics that GAC believes are in the area. The findings of the survey, particularly any mitigation measures required to protect or manage any identified historic heritage sites/items, would be provided to the DoP and incorporated into the CEMP for the project.

4.18.3 Impact on heritage

Issue description

- Technical Paper 3 claims that noise mitigation measures at the source (Nanima House) are not feasible and that property procurement may be the only feasible measure for Nanima House. This strategy would have a substantial impact upon the heritage significance due to the break in the ownership chain, and the uncertain future of the occupancy and condition of the property.
- Nanima House will become uninhabitable due to excessive noise levels up to 10 dB over the recommended DECC levels. The risks associated with vacant historic homes are vandalism and degradation due to lack of ongoing maintenance.
- The power station will exceed Australian noise standards at a heritage listed house. This house will also be damaged by vibration from the power station.

  Submission No. 1, 2, 4, 5, 13

Response

Issues relating to Nanima House have been addressed in Section 4.23.

Potential vibration impacts from the power station have been addressed in Technical Paper 3 (Noise and vibration assessment). Section 7.6 of that report predicts that operation of the power station would not result in sources of vibration of sufficient magnitude for received propagated vibration levels at the nearest potentially-affected receptors to be in exceedance of annoyance or structural limits. It further concludes that vibration is not expected to occur external to the immediate locality of operational plant.

4.18.4 Mitigation measures

Issue description

- The Environmental Assessment recommends the procurement of Nanima House as the only feasible way of mitigating the noise, air quality and visual impacts. This is not an option. The property is not for sale under any circumstances; ERM is well aware of this fact.

  Submission No. 6

Response

Noted.

Issues relating to Nanima House have been addressed in Section 4.23.

4.18.5 Further assessment

Issue description

- It is recommended that further historical heritage assessment be undertaken on the significance of Nanima House before any approval is granted.

  Submission No. 6

Response

Issues relating to Nanima House have been addressed in Section 4.23.

4.19 Land use and property

4.19.1 Land use affected

Issue description

- Contamination may lead to a loss of rural production.
- The constant noise interjections from the power station will cause the breeding program of champion stallions to be put at risk.
- The pollution from the power station could cause farmers' crops to perish.
- The power station will affect our animals and crops through waterways, rivers etc.

  Submission No. 1, 2, 4, 6, 16, 35

Response

The community concerns raised about the air emissions from operation of the power station have been addressed in Section 4.11. The findings of the air quality impact assessment concluded that the emissions of all parameters from operation of the power station are predicted to be well within the adopted limits and, as such, minimal impact on air quality is expected. These conclusions can be correlated to rural production, plants and animals — no impacts on these due to reduced air quality would be expected. Similarly, it is not expected

that the breeding programs of stock would be affected by the noise emissions from the power station.

4.19.2 Property devaluation

Issue response

- If an alternate site is not feasible, then a condition of project approval must be procurement of the Mount Nanima property.
- If the power station goes ahead, ERM should engage licensed valuation expert to report expected depreciation of affected properties.
- No one will buy a house so close to toxic waste site.

  Submission No. 5, 7, 11

Response

There are many factors that influence property values and it is not agreed that the establishment of the proposed power station would in itself necessarily have this effect. The construction and, to a lesser extent, operation of the power station will generate local employment an a demand for goods and services. A significant amount of money will be spent in Wellington and the local region. These factors will increase community wealth and demand local property.

Management of potential impacts at the Mount Nanima property is discussed in Sections 4.12, 4.13 and 4.16.

The proposed power station would not be a “toxic waste site” as suggested; this is reflected in the findings of the air impact assessment (Technical Paper 4 and Section 9.3 of the Environmental Assessment) and the information provided in Section 10.7 of the Environmental Assessment addressing the production and management of liquid and solid waste at the power station site.

4.19.3 Mineral resources

(a) Issue description

- The proposed pipeline does not traverse any known resources with the possible exception of sand and gravel resources at Maryvale, north-west of Wellington.

  Submission No. 8B

Response

Noted.

(b) Issue description

- The pipeline corridor traverses a number of current exploration licences (EL6644, EL5675, EL6910, EL6931, EL7036, EL6311, EL6781, EL6178). Title holders should be contacted regarding the route of the proposed pipeline. The proponent should ensure that these companies are aware of the proposed pipeline corridor and are given the opportunity to comment. It is unclear in the EA that this contact has been made by the proponent.

- The proposed pipeline corridor may intersect with a known sand and gravel resource (and quarry operation) at Maryvale on the Macquarie River. The proponent should contact the quarry operator.
- The DPI Minerals division can provide additional information in relation to the present study regarding the location of known and potential mineral resources, and the locations of known operating mines and quarries.

  Submission No. 8B

Response

ERM Power thanks the DPI for providing this information about current exploration licences, and the known sand and gravel resource and quarry operation, across which the proposed gas pipeline may traverse. During detailed design, ERM Power would consult with the relevant companies to ensure the proposed pipeline does not affect any of their operations. ERM Power would contact the DPI should it require information relating to this matter. The SoCs have been revised to include a commitment reflecting this (see Appendix B).

4.20 Socio-economic impacts

4.20.1 Tourism affected

Issue description

- Contamination may lead to a loss of tourism.
- Having a power station in Wellington could ruin tourism.

  Submission No. 1, 2, 4, 17

Response

Section 10.4.1 of the Environmental Assessment acknowledges that, during construction of the power station, accommodation during peak periods may be reduced in the short-term, due to non-local employees requiring temporary accommodation. However, this section also recognises that any decrease in tourism would be compensated by an increase in spending by the construction workforce. As such, ERM Power does not believe that construction of the power station would lead to reduced income for tourism orientated businesses.

The location of the power station in Wellington is not anticipated to result in a loss of tourism during its operation. This includes at the Keston Rose Garden Café to the north-west of the power station site, where the landscape planting measures committed to by ERM Power would successfully mitigate any potential visual impacts the proposed power station may have on this site.

4.20.2 Benefit for Wellington

Issue description

- The power station will have little benefit for/will not add value to Wellington.
- The power station will not create many jobs for people in Wellington.

- Everyone said that development of the jail would be good for the community, and that it would bring hundreds of workers and family members to the town. In my opinion, we probably got 15 more families move here. The power station is nowhere near as big as the jail and isn't proposed to have as many employees — what is Wellington benefitting?
- It is said that lots of jobs will be created during construction. From experience I personally only knew about five people who were locals that got employment during this phase when the jail was built. Most workers came from other communities and sent their money back to their own communities.
- If between five and seven people will be employed after it is built then I suspect they will not be drawn from the local population.

  Submission No. 1, 2, 4, 16, 17, 20, 56, 57

Response

ERM Power is not in a position to comment on the claims concerning the establishment of the jail.

Section 10.4 of the Environmental Assessment has discussed the benefits to the local community that would be expected during construction and operation of the project. It identifies that key benefits would relate to the creation of local jobs, expenditure on accommodation, food and everyday needs by the employees, the purchase of local goods and services during construction, and the use of local manufacturers and service providers during operation of the power station, particularly during major maintenance activities. ERM Power maintains that the local community would experience such benefits, and has committed to sourcing local employees, goods and services wherever possible to maximise the economic benefits to the local community (see SoCs SO1 and SO2 in Appendix B).

4.20.3 Social impact

Issue description

- People currently living in Wellington may move to different areas because of the damage it will cause to the community and the environment. This may mean loss of friends and family.
- The power station will jeopardise people's lives, and their dreams, hopes and passions.
- Wellington is clean, peaceful and serene. The power station will endanger this reputation and Wellington will not be as beautiful as it is now.
- People who live in Wellington are used to a quiet society; the power station will change this.

  Submission No. 31, 38, 50, 56

Response

The concerns of these respondents are noted. Initial and perceived impacts are often difficult to temper. ERM Power's experience with other similar power station projects suggests that community perceptions change after commencement of operation, once they have

experienced the minimal impact the power station actually has on the community and the environment.

4.20.4 Compensation recommended

Issue description

- If the power station goes ahead, ERM should engage relevant medical experts to advise on the adverse health effects of the visual, noise and emission pollution, and pay those landowners compensation.
- If the power station goes ahead, ERM should accept their ethical and moral responsibilities as good corporate citizens and compensate people for the financial loss and adverse health effects brought about by this development.

  Submission No. 7

Response

Section 4.19.2 address concerns raised about property devaluation.

Sections 4.11.3–4.11.5 address concerns raised about potential health effects of the power station. The findings of the air impact assessment report indicate that no ill health effects would be experienced, due to all emission parameters predicted to be well below the adopted goals. ERM Power has committed to ongoing monitoring of air emissions during operation of the power station to ensure they are maintained below the regulated limits.

Section 4.12.6 addresses concerns raised about potential hearing problems caused by the power station. The response indicates that the noise levels predicted to be experienced in public places and at sensitive receptors would be well below the Australian standard for safe noise levels.

No adverse health effects are expected to be experienced by any visual impacts of the power station.

As such, ERM Power does not believe that compensation will be required for the community of Wellington.

4.20.5 Terrorist target

Issue description

- I realise it's unlikely but it is a real possibility that Wellington could be a terrorist target. If you wanted to upset the government it would be easy to target the electricity station and the gas-fired power station if they are adjacent to each other. The local reservoir of Burrendong Dam, which holds three times as much water as Sydney Harbour, could also be targeted. We do not have the security resources like larger urban centres to protect ourselves.

  Submission No. 57

Response

ERM Power does not believe that the Wellington Power Station will provide a terrorist threat to Wellington. The power station is privately owned and disruption/destruction of the facility

will not lead to cumulative impacts for the people of Wellington. As explained in Section 7.1.3 of the Environmental Assessment, the power station site will be security-fenced and a closed-circuit camera system would be installed and continually monitored. The compressor station would have similar security measures in place.

4.21 Geology and soils

(a) Issue description

- With contaminated water dammed on site, seepage into the soil and into the limestone layer is a real threat. These contaminants may then travel through the limestone contaminating the whole system.

  Submission No. 1, 2, 4

Response

Section 10.6.4 of the Environmental Assessment identifies the water management strategies, guidelines and principles that would be implemented during development of the stormwater management system and wastewater management system at the power station site. All wastewater ponds on the site would be lined to prevent seepage into the soil.

The DECC has requested an amendment to SoC SW3 to commit ERM Power to line all wastewater storage dams to ensure a permeability of 1 x 10^{-9} m/s is met and that they be designed to allow for sludge removal without damage to the liner. ERM Power supports this amendment (see Section 4.25.6 (issue (c)).

Section 4.22.4 addresses issues raised regarding the quality of wastewater to be stored at the power station site.

(b) Issue description

- No information provided in relation to accumulation of toxins in the soil.

  Submission No. 1, 2, 3, 4

Response

Sections 4.11.3–4.11.5 address concerns raised about the air emissions and their potential impacts from operation of the power station. The findings of the air quality impact assessment concluded that the emissions of all parameters from operation of the power station are predicted to be well within the adopted limits and, as such, minimal impact on air quality is expected. Therefore, given the low levels of air emissions predicted to occur and the fact that the study area is not part of an airshed already under stress, ERM Power does not consider accumulation of toxins to be an issue. The nature of dispersion of emissions from the power station would ensure that there would be no accumulation of toxins in the soil.

4.22 Hydrology and water quality

4.22.1 Water pollution

Issue description

- Once the water is used for cooling the turbines it is dammed on site. When it rains the water will overflow, causing contamination of the Macquarie River.
- The power station could lead to water contamination/pollution.
- The pollution from the power station will settle on the river and in water environments.
- ERM Power was unable to answer questions in relation to accumulation of toxins in the water.
- No studies have been made on accumulation of toxins on rain water collected for consumption.
- ERM was unable to advise us of the accumulation factor of chemicals, especially in our water supply. All households out here have tank water, which is collected from roofs. What is the impact going to be? Who will pay compensation when children are poisoned?
- If the development goes ahead, an independent company should be employed to consistently measure the tank water supply at all houses to ensure that it does not become toxic to drink from the power station.
- The cumulative impact of dust and toxic particles on roofs and associated drinking water implications have not been addressed.
- There are concerns that the residents' drinking water may become polluted, as most residents rely on water tanks.
- We rely heavily on rainwater. The emissions and particles that will inevitably settle on our roof may have dire consequences to the health of my family.

Submission No. 1, 2, 3, 4, 5, 11, 12, 18, 19, 22, 27, 28, 35, 36

Response

Sections 4.11.2 – 4.11.5 address concerns raised about the air emissions and their potential impacts from operation of the power station. The findings of the air quality impact assessment on operation of the power station concluded that the emissions of all parameters are predicted to be well within the adopted limits, so minimal impact on air quality would be expected. This finding can be correlated to consider the potential 'accumulation of toxins' in watercourses and water supplies — the low levels of air emissions predicted to occur would not lead to accumulation of toxins in water such that it would pose a health issue. ERM Power has committed to undertake ongoing monitoring of the air emissions from the power station to ensure it complies with adopted emission goals and thus does not cause water pollution.

4.22.2 Fisheries Management Act 1994

Issue description

- In accordance with the *Fisheries Management Act 1994*, fundamentally, developments should aim to achieve no net impact upon the receiving waterways. However, because the project is classified under Part 3A of the EP&A Act, such approval provisions contained in the FM Act do not apply to this project.

  Submission No. 58

Response

Noted.

Construction of the gas pipeline would be undertaken in a manner that minimises impacts to watercourses and their aquatic habitats, and would aim to achieve 'no net impact'.

4.22.3 Water supply

(a) Issue description

- How much of the water required for the power station is going to be drawn from the Council watermain pipe? How will this affect other users?
- What guarantee will there be that there will be no requirement for additional water from Wellington town water supply?
- Inadequate information regarding security of water supply and identification of water supply sources in terms of both (1) finalising the water sources and extraction points and (2) the availability of water in regard to appropriate licensing and water supply.
- There is no security provided in terms of the availability of supply or authorisation from Wellington Shire Council. While it is recognised that a potential arrangement for water supply between Council and the applicant is not the responsibility of DWE, it needs to be recognised that the availability of this water is subject to the existing TWS entitlement and accompanying allocation held by Council's licence within the Macquarie-Cudgegong Regulated River Water Source. The applicant is therefore advised that the availability of this supply is subject to commercial risk, and that the applicant cannot rely on a potential proposal by Wellington Council to increase their TWS to ensure the water security for the proposal. Due to the identification of a number of commercial risk issues and potential licensing requirements, the proponent should be required to demonstrate they have the ability to secure the nominated water supplies.
- The source of the 3.3 ML of water required for hydrostatic testing is yet to be determined. Advice is provided relating to the potential licensing requirements for hydrostatic testing:

  Water Management Act 2000 (1) in terms of accessing this water from the TWS the comments in the previous point apply. (2) If water is source from the Macquarie River where covered by the Macquarie-Cudgegong Regulated River Water Sharing Plan, the requirement for a work approval under the Act is considered exempt by DWE under S75U of the EP&A Act if the extraction sites and methods form part of the

environmental assessment and subsequent Ministerial Approval. So a work approval is not required, further information will be required, including details of the extraction sites and methods of extraction, in addition to evidence of permission to extract from the landowner. (3) The requirement for a use approval and access licence for hydrostatic testing are exempt under S38(1a) and 18(1d) of the Water Management Act (General) Regulation 2004.

Water Act 1912 (1) Water extracted from unregulated rivers, creeks or farm dams will require a permit under Part 2 of the Act. (2) Water extracted from groundwater bores will require a licence replacement to authorise the additional purpose (hydrostatic testing) and a 'supply to' condition. Acceptance of any such application will be subject to any applicable embargo notices (i.e. Upper Macquarie Alluvial GWMA 009). (3) Licensing under the Act will require assessment in accordance with Part 5 of the EP&A Act.

- Recommend that, prior to approval being issued by DoP, the security of water supply be proven.

  Submission No. 10, 58, 60

Response

ERM Power's preferred water supply source for operation of the power station (20 ML per year) and for hydrostatic testing of the gas pipeline (approximately 3.3 ML) would be from the Wellington town water supply. This was identified as the most practical option during the preparation of the Environmental Assessment, as Wellington Council advised that a water supply pipeline passing the site has recently been upgraded to supply the new Wellington Correctional Centre. As such, the infrastructure to supply the power station with water is fundamentally already present, and would require few modifications to deliver water to the power station.

Since receipt of these submissions, further consultation has been undertaken with Wellington Council and the DWE regarding the security of this water supply.

Wellington Council has not raised any concerns in the provision of 20 ML per year for operation of the power station and 3.3 ML for hydrostatic testing of the pipeline, given that the allocation is small in comparison with the Council's typical water allocation of 1,800 ML per year and historical consumption of between 1,000 ML and 1,200 ML per year. A letter from Council confirming this position is provided in Appendix G.

ERM Power acknowledges and accepts that the procurement of water for the project is at its own risk, and that there may be occasions when the town water supply would become unavailable. As such, ERM Power has identified two back-up supply options:

- installation of a bore on-site
- procurement of high security water.

The proposed power station site includes a small bore that is licensed to supply water for stock and agricultural purposes. While this licence could not be used for industrial purposes, its presence identifies that groundwater supplies are available in the area.

A desktop hydrological investigation into the feasibility of extracting up to 20 ML of water from this groundwater source for the purpose of supplying the power station has been undertaken. The report is provided in Appendix E. The findings of the investigation determined that groundwater in the region is present in alluvial aquifers, and fractured and porous rock aquifers. The primary aquifers within the project site are:

- Lachlan Fold Belt— The Lachlan Fold Belt groundwater management area covers a very large area of 210,585 square kilometres and comprises fractured rocks, including the Molong Limestone groundwater management area (see below). The total entitlements are currently at 60,570 ML/year. The sustainable yield has been calculated as 1,057,599 ML/yr. Groundwater yields are generally less than 5 litres per second.
- Molong Limestone — The Molong Limestone groundwater management area has a sustainable yield of 7,000 ML/yr. Groundwater yields at the better sites can be obtained to about 10 litres per second.

The DWE groundwater database indicates that 112 boreholes are registered within 5 kilometres of the proposed power station site. Three bores located within 1 kilometre of the site are less than 12.2 metres in depth. Two of the 112 bores accessing water from the fractured rock aquifers provided information on standing water levels, lithology and yield — the depth to water was between 7.3 and 7.9 metres below ground level, and yields of 0.3 to 1.4 litres per second were obtained (this data, however, was from 1968). Most bores in the area access the alluvial aquifers associated with the Macquarie and Bell rivers and their tributaries to the west and south-west of the site. Average bore depth is 20 metres below ground level.

The hydrogeological assessment concluded that it is likely that groundwater yields of up to 20 ML/year could be sourced from a bore on the power station site. The low entitlements currently associated with the primary aquifers within the project site compared with the sustainable yield of those aquifers indicates that development of an on-site bore to supply the power station with approximately 20 ML/year of water is highly feasible, so provides a very good back-up supply option for the project. During detailed design, ERM Power would undertake a drilling testing program to confirm the feasibility of water supply via a groundwater bore.

As an alternative, ERM Power may consider the procurement of an annual allocation of 20 ML of high security water could be purchased for the project. This option would be investigated during the detailed design phase of the project.

(b) Issue description

- Recommended that considerable information be provided as part of an EMP for endorsement by DWE prior to construction. As some information critical to the assessment has not be confirmed in the EA [see issue description (a) in Section 4.22.3], there is a risk that DWE's assessment of the EMP may require alterations to components of the existing proposal and the imposition of licensing requirements following approval issued by DoP.

  Submission No. 58

Response

Noted.

The CEMP would include detailed information regarding the source of water for hydrostatic testing of the pipeline, and would address management issues relating to its acquisition, transport, use and redistribution following use (Section 7.5.3 of the Environmental Assessment, subheading "Hydrostatic testing", explains that because some treatment to the water used would be required to prevent corrosion and to kill biological organisms, the water may not be suitable for crop irrigation or stock water. However, ERM Power has committed to maximising the reuse of the water wherever possible).

The OEMP would also include detailed information regarding the source of water for operation of the power station, and would address management issues relating to its acquisition and use. Details relating to the water supply for the power station would be determined during the detailed design phase of the project.

ERM Power has revised the SoCs to include a commitment specifically relating to the water supply. A commitment to consult with DWE when securing these water sources has also been added (see Appendix B).

(c) Issue description

- Should there be any requirement to obtain water licences or utilise water from sources administered by DWE, these water licences are likely to be outside any normal approval issued under Part 3A of the EP&A Act.

  Submission No. 58

Response

It is acknowledged that approval under the *Water Management Act 2000* or the *Water Act 1912* would be required from the DWE to use water for the purposes of extraction of groundwater via a bore. It is understood that the aquifers associated with the power station site are managed under the *Water Act 1912*. ERM Power would seek a groundwater licence under Part 5 of this Act prior to construction of any groundwater infrastructure.

In July 2008 a state-wide embargo was placed on the issuing of new Part 5 Water Licences (groundwater) in the NSW Murray Darling Basin, which includes all alluvial systems, and porous and fractured rock aquifers. However, there is an exemption for new groundwater licences for fractured and porous rock aquifers where the project is approved under Part 3A of the EP&A Act. ERM Power notes that this exemption would apply to the current project if approval is granted by the Minister for Planning under Part 3A of the EP&A Act.

4.22.4 Water management at the power station

(a) Issue description

- No description of the quality of the waste water to be stored at the site.

  Submission No. 58

Response

Generally, the quality of the stormwater stored at the power station site would be similar to that of a carpark (i.e. relatively clean). Section 10.6.2 of the Environmental Assessment identifies the types of liquid wastes that would be generated on-site. Section 10.7 of the Environmental Assessment has identified that all liquid wastes would be controlled in accordance with a zero liquid waste effluent policy. It also explained that all liquid wastes to be removed from the site would be stored on-site in dedicated 200-litre drums or in pits prior to collection and disposal by a licensed liquid waste contractor.

As such, while it is acknowledged that the exact quality of the wastewater to be stored at the site has not been identified, the zero liquid waste effluent policy that would be implemented would ensure appropriate management of all wastewater, regardless of its quality.

(b) Issue description

- Stormwater should be managed in accordance with the requirements outlined in the Landcom (2004) document *Soils and Construction — Managing Urban Stormwater*.

  Submission No. 59

Response

Noted and agreed.

ERM Power has revised the SoCs to include Landcom document as a "Guiding principle" for SW3 (see Appendix B).

(c) Issue description

- DWE supports the intent of the statements in the EA that indicate that a stormwater management system will be developed that will ensure no discharge of waste water from the site and no increase in peak stormwater flows from the site. However, there is no information identifying the quality of the wastewater, the hydrological conditions that the mitigating measures will need to address, areas of clean or contaminated water sources, or the mitigating measures to protect the surface water or groundwater systems from potential contamination or impact. As this information has not been provided, DWE cannot assess the potential impact in regards to surface water, groundwater and riparian systems.
- DWE would expect that the detailed stormwater management system and waste storage system be provided in the EMP for endorsement by DWE prior to construction. This plan would need to address requirements of DWE policies, including the *NSW State Groundwater Policy Framework*, the *NSW Rivers and Estuaries Policy and the Farm Dams Policy*.

  Key issues for DWE within the EMP include: (1) Identification of clean and contaminated areas at the site and nomination of the proposed storage design, location and volumes in accordance with the Landcom (2004) guideline *Soils and Construction: Managing Urban Stormwater*. Design and size of storages will need to be considered in terms of the Maximum Harvestable Right Dam Capacity as detailed in the Farm Dams Policy. (2) Details of the quality of the waste water to be stored on site. (3) Mitigating measures to protect groundwater quality, surface water quality and downstream riparian users and the environment.

  Submission No. 58

Response

Noted.

The water management system for the power station would be developed during the detailed design phase of the project and prior to the commencement of construction. ERM Power has committed to this in SoC SW3. The system would be developed in accordance with best-practice guidelines and applicable industry standards. ERM Power has revised SoC SW3 to reflect that the details of the site water management system would be included in the CEMP and OEMP for the project, and to commit to consulting with the DWE during preparation of the site water management system. This commitment has also been revised to include the stated DWE policy documents as "Guiding principles" for SW3 (see Appendix B).

4.22.5 Impacts on groundwater

(a) Issue description

- What measures are being taken to ensure that no contaminants leak into the Wellington water supply?

  Submission No. 60

Response

Section 10.6.4 of the Environmental Assessment identifies the water management strategies, guidelines and principles that would be implemented during development of the stormwater management system and wastewater management system at the power station site. All wastewater ponds on the site would be lined to prevent seepage into the soil.

The DECC has requested an amendment to SoC SW3 to commit ERM Power to line all wastewater storage dams to ensure a permeability of 1×10^{-9} m/s is met and that they be designed to allow for sludge removal without damage to the liner. ERM Power supports this amendment (see Section 4.25.6 (issue (c)).

All liquid wastes on site would be controlled in accordance with a zero liquid waste effluent policy, which would be implemented through the evaporation and stormwater ponds and appropriate waste removal practices. This would ensure that no contaminants run off-site and leak into any watercourses or water supplies.

(b) Issue description

- No assessment of the existing groundwater conditions.
- No assessment of the potential impact on the existing groundwater or groundwater users, or the necessary mitigating measures to meet the requirements of DWE policy.
- The proposal indicates the requirement for the storage of waste water; however, there is no information on the quality of this water or the necessary measures to mitigate impact. Therefore, DWE cannot assess the impact on groundwater quality or groundwater users. A preliminary review by DWE of the local conditions has identified no initial concerns in terms of groundwater; however, further assessment will be required on receipt of the draft EMP. DWE expects that the local groundwater conditions, quality of the wastewater and detail of appropriate mitigating measures be detailed in the EMP for endorsement by DWE prior to construction. The outcomes will

need to meet the requirements of the *NSW Groundwater Quality Protection Policy*. As this information has not been provided within the EA, DWE may require additional information, design or licensing requirements, hence making the project subject to commercial risk.

Submission No. 58

Response

Potential impacts on groundwater were not identified as a key issue in the Preliminary Environmental Assessment and subsequently in the DGRs that were issued for the project due to the nature of the proposed activities.

The desk-based hydrogeological assessment undertaken to investigate potential for groundwater supply at the power station identified that the most shallow groundwater supply is likely to be no less that 7 metres below ground level. Construction of the power station turbines would require footings approximately 2–2.5 metres below the surface. The turbines are proposed to be positioned at a relative level of 331 metres Australian Height Datum. To achieve this, a maximum cut of 3–4 metres would be required, providing for an additional 0.5–2 metres depth to groundwater. There would be some risk that groundwater would be exposed during construction of the power station. This would be assessed during the detailed design, when the drilling testing program would be undertaken to confirm depth to groundwater on the site (see Section 4.22.3). Any measures required to manage the possibility of pit dewatering during construction would be developed and implemented through the CEMP process.

During operation there would be negligible risk of impacts to groundwater. The power station site would be a sealed site with a stormwater and wastewater management system developed and implemented to ensure no discharge of waste (see Section 4.22.4). Minimal amounts of hazardous materials would be present on site; transport and storage of these would be undertaken in accordance with the *Australian Code for the Transportation of Dangerous Goods by Road and Rail*, and *AS 3780-1994 The Storage and Handling of Corrosive Substances*; this would be implemented through the OEMP process.

4.22.6 Further information requested

Issue description

- DWE request the following information to enable adequate assessment of the development prior to Ministerial determination: (1) Water sources, methods of water extraction and water extraction points for hydrostatic testing to be confirmed. These may require licensing under the *Water Management Act 2000* and the *Water Act 1912*. (2) Detail on any additional creek crossings. These would not be considered under the S75U exemption of the EP&A Act. (3) Detail of the quality of the waste water generated and stored at the power station. (4) The proposed measures to ensure protection of the groundwater and surface water due to the proposal to store wastewater at the site.

  Submission No. 58

Response

These issues have been addressed in Sections 4.7.5, 4.14.3, 4.22.3, 4.22.4 and 4.22.5. ERM Power believes the information provided in these sections, and the revised commitments in Appendix B, adequately addresses the DWE's concerns.

4.22.7 Pipeline watercourse crossings

(a) Issue description

- Inadequate information regarding confirmation of the watercourse crossing locations, methods and design, and proposed mitigating measures.
- As the pipeline route is yet to be finalised and no site-specific waterway crossing location, design or mitigating measures have been included in the EA, DWE cannot assess the potential impact. DWE recognises that the pipeline has been included for approval in the proposal, and that a selection of methods for waterway crossings has been suggested. On this basis, DWE would expect that detailed waterway crossing design and mitigation be developed in accordance with DWE guidelines and be provided in the EMP for endorsement by DWE prior to construction. (DWE provided guidelines relevant to these activities with their submission). DWE advises that as this information has not been provided in the EA there may be the requirement to modify the proposed watercourse crossing locations or proposed methodologies if a potential impact cannot be appropriately mitigated.

  Submission No. 58

Response

Noted.

The Environmental Assessment does provide mitigation measures and commitments to be implemented during construction of the gas pipeline, particularly as they relate to the protection of biodiversity (see Section 9.5.3 and SoC B3), and hydrology and water quality (see Section 10.6.3, and SoCs SW1, SW2 and SW5).

During the detailed design phase of the project, the pipeline route would be finalised through on-site survey of the entire route. At this time, all watercourse crossings would be assessed to identify the appropriate crossing method (In Section 4.7.5, ERM Power has committed to use directional drilling to cross the Macquarie River, Little River and Buckinbah Creek). Also at this time, crossing-specific mitigation/construction measures would be identified and stipulated through the CEMP. SoC SW5 commits ERM Power to consult with the DWE during this detailed design phase. This commitment has been updated to address the development of crossing-specific mitigation/construction measures (see Appendix B).

(b) Issue description

- If any activities required within 40 metres of waterfront land have not been identified in the EA and subsequent Ministerial Approval, then a controlled activity approval will be required from DWE under the *Water Management Act 2000*. DWE considers any such activities not to be covered by the provisions of S75U of the EP&A Act.

  Submission No. 58

Response

Noted.

This is highly unlikely to occur. However, if, during the detailed design phase, any activities for the project that are required within 40 metres of waterfront land (which are not identified in the Environmental Assessment and Ministerial Approval), application for a controlled activity approval would be sought from the DWE under the *Water Management Act 2000*. The SoCs have been revised to include a commitment relating to this matter (see Appendix B).

4.23 Noise and heritage issues at Nanima House

Numerous submissions raised issues relating to noise amenity and cultural heritage impacts at Nanima House. These issues have been noted in Sections 4.8.4, 4.8.5, 4.12.3, 4.12.4, 4.12.9, 4.13.2, 4.18.1 and 4.18.3–4.18.5; a consolidated response to these issues is provided below.

It is acknowledged that the most notable environmental impact of the proposed development is the potential noise impact at the closest residential receptor located approximately 700 metres west of the proposed power station site, namely at Nanima House.

The results of the noise impact assessment presented in the Environmental Assessment indicate that the noise levels at this receptor could be in the order of 8 dB(A) above the adopted noise criterion of 35 dB(A) $L_{Aeq,\ 15\ min}$ under neutral meteorological conditions and with the +5 dB low frequency modifying factor applied.

In its submission, the DECC has indicated that it would not normally licence to this predicted level but would support alternate mitigation solutions, including a negotiated agreement or land acquisition strategy. This advice is consistent with previous discussions held with the DECC on 30 October 2007.

ERM Power undertook significant efforts to address this issue during the Environmental Assessment and currently as part of the Submissions Report process. These efforts have been based on previous discussions with the DoP and DECC, and satisfying the following hierarchy of noise mitigation objectives:

- **Control at the source**: Achieve the maximum possible noise reduction at the source by considering plant orientation and configuration, and the selection of the best available and economically feasible noise reduction technologies.
- **Control at the receiver**: Achieve the maximum possible reduction at the receiver by the construction of a noise barrier near the affected dwelling or installing architectural fittings at the dwelling to significantly reduce noise levels adjacent to and/or inside the dwelling. This requires agreement and consent from the owner of the dwelling.
- **Acquisition of affected property**: This is generally considered a ‘last-resort’ option should the first two objectives be inadequate to reduce noise impact or rejected by the affected owner. The acquisition of the property and provision of reasonable compensation would be formalised under the terms of a negotiated agreement between ERM Power and the landowner.

The first objective has already been achieved and considered in the noise impact assessment associated with the Environmental Assessment (see below).

ERM Power is currently in discussions with the owner of Nanima House to hopefully reach a mutually-acceptable negotiated agreement that would allow for the implementation of noise controls at the property (subject to satisfying heritage constraints) or the acquisition of the property. This would allow for the operation of the power station without the potential for significant noise impacts on the property.

A more detailed discussion of each of the above items is provided below for the Department's consideration.

4.23.1 Control at the source

Site optimisation (plant location and orientation)

Site optimisation works were carried out with regard to plant location and orientation within the preferred site as part of the Environmental Assessment (see Section 6.2.3 of the Environmental Assessment). Four separate site configurations were assessed (only three configurations were represented in the Environmental Assessment because the fourth was not feasible as it encroached on Gulgong Road). The works found that changes in site orientation resulted in a trade-off of received noise levels, with increases in noise impact predicted to occur at either Cadonia Estate or the Keston Rose Garden Café.

The assessment concluded that the variations in site location and/or orientation did not provide outcomes that were significantly improved with regard to potential noise impacts at each of the nearest potentially affected receivers. On this basis, the plant location and orientation currently being proposed is close to being optimal from a noise impact perspective.

It is important to note that refinements to the final plant location, orientation and/or configuration may be possible during the detailed design phase of the project, which could further reduce the potential noise impacts at Nanima House without affecting other receivers. This would be one of the key objectives of the design phase. Any changes in the final layout and orientation of the gas-fired turbines and exhaust stacks would be reviewed to ensure the environmental impacts associated with those changes are consistent with the predictions made in the Environmental Assessment. Any increase in the environmental impact of the final design would be assessed, and mitigation measures developed accordingly, prior to the commencement of construction.

Source amelioration

The proposed acoustic design of the power station will be undertaken in accordance with the requirements specified within Chapter 7 of the NSW *Industrial Noise Policy* and based on best available technology economically achievable (BATEA) principles.

Siemens, as the preferred plant supplier, has indicated that all reasonable economical and technically feasible noise control options have been considered in the design of the gas turbine facility. A preliminary version of the Noise Protection Concept and Engineering Specification (Acoustical Requirements) prepared by Siemens was considered during the

Environmental Assessment, and will again be reviewed prior to design finalisation and validated during plant commissioning.

The noise impact assessment and associated modelling undertaken as part of the Environmental Assessment considered all of the noise control options and source reductions proposed by Siemens and described herein.

ERM Power confirms that the Noise Protection Concept and Engineering Specification would be equal to industry best practice and consistent with other similar power stations developed in NSW, including Colongra Power Station and Uranquinty Power Station.

A summary of key noise-generating plant with consideration of the noise reduction techniques being proposed by ERM Power and Siemens for this project is detailed below.

Flue gas system — stack

The stack mouth is the key noise source associated with the facility. A sound power level of less than 98 dB(A) would be achieved. Based on PB's experience, this is consistent with industry best practice.

A silencer providing high sound transmission loss would be installed in the exhaust system. The silencer would dampen noise generated by the gas turbine exhaust. At the stack body, upstream of the silencer, acoustical insulation would be included as opposed to traditional thermal insulation only.

It is expected that Siemens would achieve a source reduction greater than 50 dB(A) from the flue gas system — being the key site-specific noise source.

Turbine enclosure

The gas turbine units, generators and air intake ducts would be installed within a high performance acoustic design enclosure that is similar to the Uranquinty Power Station project. It is expected that sandwich panels with acoustic absorption would be utilised for all elements providing a high level of sound attenuation with a weighted apparent sound reduction index (similar to Sound Transmission Class STC) in excess of 49 dB(A).

All interfaces and ventilation openings would be equipped with silencing. It is understood that the noise suppression room would be designed to achieve a maximum wall radiated and ventilation opening emitted sound power level of at least 88 dB(A).

Filter house

The filter house consists of the elbow casing, silencer casing and air inlet openings. Through the provision of double wall construction (metal shell, insulation, liner sheets) for the gas turbine air inlet duct and an absorptive silencer providing a sound transmission loss in excess of 60 dB(A), the resultant sound power level would be 90 dB(A) or less.

Diffuser extension duct

The key noise component of the diffuser extension duct would be area sources present at sections in the exhaust duct. Specific acoustic measures would be implemented at these sections as well as enclosing the entire diffuser extension duct in a noise suppression room.

Applying standard design for the diffuser utilising double wall construction (metal shell, insulation, liner sheets) would reduce the sound power level to 108 dB(A). Further attenuation, through installation inside a high performance noise suppression room providing a high level of sound attenuation with a weighted apparent sound reduction index (similar to Sound Transmission Class STC) in excess of 49 dB, should reduce the sound power level to 98 dB(A) or less. Sound power levels of 90 dB(A) are expected upon finalisation of the detailed acoustic design.

Fin fan coolers

The coolers are expected to be of a low noise design utilising low fan blade tip speed and installed with absorption silencers that would reduce sound power levels to below 96 dB(A). Although details regarding fin fan cooler design and utilisation of absorptive silencers are vendor-specific and unknown at the date of this document, the proposed fin fan coolers would be low noise emitters when compared to industry standards.

Transformers

Low voltage and unit transformers are expected to be included in the design of the facility. The low voltage transformers are designed for low noise operation, the sound power level of each would be 70 dB(A) or less. The unit transformer would be specially designed for low noise and the sound power level would be 93 dB(A) or less.

4.23.2 Controls at the receiver

Noise barrier

Barrier placement options have been assessed. To be effective, the barrier would need to be placed either close to the source or close to the receiver. Placement of the barrier close to the source would not be effective given that the stack tip is located at a height of relative level (RL) +35 metres. Hence, the only feasible option would be to install a barrier as close as possible to the receiver.

A preliminary assessment of changes in expected incremental noise impacts at Nanima House, with consideration to a number of barrier placement options, has been undertaken. Details of this assessment have been provided in Appendix D and a summary of the assessment is provided below.

A separation distance of 10 metres and nominal barrier length of 10 metres were adopted for the purposes of this preliminary assessment. The predicted noise levels at the building façade closest to the power station, under neutral meteorological conditions with the +5 dB low frequency modifying correction factor applied, are provided in Table 4-1.

Table 4-1 Predicted noise levels with noise barrier adjacent to Nanima House

Parameter	Model scenario		
	1	2	3
Distance between barrier and building façade (nominal)	10 metres	10 metres	10 metres
Barrier length (nominal)	10 metres	10 metres	10 metres
Barrier height (nominal)	3 metres	5 metres	7 metres
Predicted noise level in Environmental Assessment	43 dB(A)	43 dB(A)	43 dB(A)
Predicted noise level with barrier in place	**38.5 dB(A)**	**35 dB(A)**	**31.5 dB(A)**
Predicted noise reduction	**-4.5 dB(A)**	**-8 dB(A)**	**-11.5 dB(A)**
Compliance with 35 dB(A) goal	No	Yes	Yes
Compliance with 40 dB(A) (INP night-time ANL)	Yes	Yes	Yes

Notes: INP = Industrial Noise Policy; ANL = Acceptable Noise Level (Table 2.1 of INP)

The results of the preliminary assessment indicate that a barrier with minimum height of RL +5 metres located at a distance of 10 metres from the residential façade nearest to the proposed power station at Nanima House could reduce noise levels to the extent that the power station would comply with the prescribed noise criterion of 35 dB(A) under neutral meteorological conditions.

Further detailed studies would need to be undertaken to refine the final location and physical dimensions of the barrier while providing optimal noise attenuation.

Architectural treatments

Should adverse noise impacts be experienced at the property and the construction of a noise barrier is not an acceptable solution to the owner of the property, the implementation of noise mitigation at the receiver through architectural treatments on the dwelling would be the next most feasible option. It is understood that the approach is considered acceptable where elevated noise impacts may potentially occur at a single receiver.

Such treatments generally include, but are not necessarily limited to:

- upgrade of external façades (walls and roof)
- treatment of openings (windows and doors)
- upgrade of insulation to provide further acoustic benefits
- passive/active ventilation options (mechanical ventilation).

Confirmation, design and assessment of adequacy would be required prior to implementation. Consideration would also need to be made to applicable and accepted industry standards and guidelines, and potential heritage implications, particularly in relation to the treatment of openings and external façades.

4.23.3 Discussion on meteorological and operating conditions

The following discussion has been provided following discussions with the DoP and DECC at a meeting held Monday 15 September 2008 (see Section 2.2.3). Please refer to the relevant sections of the Environmental Assessment for a more detailed discussion of these aspects.

Meteorological conditions

A review of the regional meteorological conditions was undertaken as part of the noise impact assessment submitted with the Environmental Assessment. The works demonstrated that wind vectors to the nearest potentially affected receivers do not occur frequently. The associated percentage of occurrence of gradient wind flows is considered low, which significantly reduces the potential for loss of local noise amenity.

An analysis of the presence, or otherwise, of temperature inversion conditions was also carried out. The analysis indicates that temperature inversion gradients may be a feature for the area, which could increase received noise levels by up to 1.5 dB(A) at Nanima House under these conditions.

In response to this, ERM Power expects that the night-time peak winter period is not a period where maximum operations would be expected — this is further outlined in the following section.

Operation and ongoing management

As indicated throughout the approval process, the proposed facility is a peak and high shoulder load power station that would support existing base load generation during high demand periods or system emergency situations. These high demand periods are expected to occur mainly during summer morning and late afternoon/evening times.

The operation of four units would mainly occur during the summer period where the units would typically operate to meet the morning and late afternoon peak periods, which normally last for about 3–5 hours. Outside of these periods, the facility may either be turned off (i.e. stand-by mode) or run intermittently with a lesser number of units, depending on market demands and network constraints.

Peaking power stations typically sell products that require the power station to operate when the electricity pool price is above a specified price, most commonly $300 per megawatt hour. ERM Power has analysed historical electricity market data for the past six years (2002–07) to determine the number of hours, between 10 pm and 6 am, when this price was exceeded. The only year in which the price exceeded this level for any period of time was during the extreme drought conditions of 2007 when Snowy Hydro generation was severely constrained. In this year, the pool price exceeded $300 per megawatt hour between 10 pm and 6 am for a total of 4 hours.

ERM Power undertook the same analysis for a lower pool price of $200 per megawatt hour, at which there is likely to be a commercial incentive to operate, regardless of contractual obligations. This pool price level was similarly only exceeded between 10 pm and 6 am in 2007 for a total period of 13 hours.

Considering the low likelihood of operation during the night-time period, the potential for adverse residential impacts normally associated with sleep disturbance would be substantially reduced.

Irrespective of the range of noise mitigation measures that are actually implemented, ERM Power proposes to establish an adaptive approach to the management of noise issues through the implementation of procedures, corrective actions and follow-up measures within the framework of an operational noise management sub-plan (ONMP), which would be part of the overarching Operational Environmental Management Plan to be developed prior to the commencement of operations, as committed to by ERM Power under SoC M5 (refer to Appendix B). The ONMP would be developed in consultation with the DECC and all potentially affected residents.

4.23.4 Acquisition of affected property

ERM Power believes that all of the options that have been made available to the landowner provide effective outcomes for all parties, such that implementation of any of these options would resolve the noise impact issue at Nanima House, and thus negate the most significant environmental impact associated with this project.

ERM Power considers that the most feasible and effective noise management measure at Nanima House would be the acquisition of this property. However, ERM Power acknowledges that, currently, this is not the property owner's preferred outcome.

ERM Power has consulted with the owner of Nanima House throughout the environmental assessment process, including following receipt of the owner's submission regarding the acquisition of this property and alternate options for this property.

In consultation with the owner, ERM Power has undertaken a valuation of the Nanima House property and has provided the owner with an offer to purchase the property at twice market value. The offer includes an alternative arrangement comprising significant financial compensation and continued occupation of the property through the implementation of:

- architectural treatments being applied to the homestead (e.g. insulation, double-glazing of windows etc) and/or
- the construction of a noise barrier between the property and the power station approximately 10 metres from the homestead and behind the eastern perimeter of the homestead garden.

4.23.5 Heritage issues

The potential heritage impacts of the proposed noise mitigation measures are currently being considered by heritage experts, in consultation with the owner, to ensure they do not affect the heritage significance and aspects of the property. A Statement of Heritage Impact would be prepared for any proposed noise mitigation measures at Nanima House.

Any agreement for ERM Power to acquire Nanima House would also include commitments for ERM Power to manage the property in a manner that ensures its heritage value is preserved.

4.24 Miscellaneous comments on environmental impact

(a) Issue description

- The effects on Wellington town have not been shown.
- Although the power station will provide power and jobs, the damage to the environment is too great.
- The degradation of the land will be a terrible problem to Wellington and surrounding areas.
- This is an environmental danger.
- Please think about the impact that the power station is having on us and the environment; I don't think it has been looked into enough.
- More tests would be beneficial.

Submission No. 3, 32, 38, 49, 54

Response

A comprehensive assessment of all potential environmental impacts of the project on the local study area has been undertaken. This assessment included consideration of the impacts on the township of Wellington. The findings, as provided in the Environmental Assessment and accompanying Technical Papers, indicate that construction and operation of the power station, gas pipeline and compressor station would not result in considerable damage to the environment, degradation of the land, and would not be an environmental danger. Furthermore, the mitigation measures committed to by ERM Power would ensure that any potential environmental impacts are effectively minimised.

ERM Power maintains that the Environmental Assessment for the project adequately addresses all the requirements of the DGRs and provides a clear indication of the potential impacts of the project. As such, ERM Power does not believe further tests are required prior to approval being granted for the project. The respondent is directed to the SoCs, which commit ERM Power to undertake noise and air monitoring during construction and operation of the project to ensure the all adopted goals are adhered to.

(b) Issue description

- The cumulative impact of toxic particles on grazing pastures/crops, and those individuals and animals that will be in direct contact with the earth and pastures/crops have not been addressed.

Submission No. 5

Response

Section 4.11 addresses concerns raised about the air emissions and their potential impacts from operation of the power station. The findings of the air quality impact assessment concluded that the emissions of all parameters from operation of the power station are predicted to be well within the adopted limits and, as such, minimal impact on air quality is expected. Therefore, given the low levels of air emissions predicted to occur and the fact that the study area is not part of an airshed already under stress, ERM Power does not consider accumulation of toxins to be an issue.

(c) Issue description

- The EA does not mention the existence of Farm Stay cottage on the Mount Nanima property. This is a sensitive receiver as it is even closer to the site (approximately 1.1 kilometres). It is recommended that mitigation initiatives for noise, air quality and visual impact would need to also accommodate the Farm Stay Cottage.

  Submission No. 5

Response

Farm Stay Cottage is located adjacent to the main residence at Mount Nanima and is occupied on a casual basis. ERM Power commits to the implementation of noise and visual impact mitigation measures on this building while such negotiations are occurring for the main homestead. The air quality assessment concluded that the air quality impacts from operation of the power station would be minimal, given that all emission parameters are predicted to be well within the adopted goals. As such, air quality mitigation measures are not proposed to be implemented at sensitive receptors, so would not be considered for Farm Stay Cottage.

4.25 Draft Statement of Commitments

Appendix B provides the revised Statement of Commitments for the project. Any amendments to draft SoCs or additional SoCs recommended below are provided in Appendix B.

4.25.1 Air quality

(a) Issue description

- DECC recommends item A4 be updated to read:

  "In dry windy conditions, dust suppression measures (such as watering, spraying or covering where required) will be implemented on disturbed areas".

  Submission No. 59

Response

Noted and agreed.

Draft SoC A4 has been amended as requested.

(b) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "During the construction period water will be utilised as necessary for dust suppression".

  Submission No. 59

Response

Noted and agreed.

ERM Power has revised the SoCs to include this commitment.

(c) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "All water utilised for dust suppression will be of a quality that does not present a risk to human health or the environment."

  Submission No. 59

Response

Noted and agreed.

ERM Power has added this commitment to the revised SoCs.

4.25.2 Noise

(a) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "Confirm assumptions used in the operational noise assessment based on choice of final gas turbine system."

  Submission No. 59

Response

Noted and agreed.

ERM Power has revised the SoCs to include a commitment that ERM Power will confirm the assumptions used in the noise assessment if the chosen gas-fired turbine system is different to that used in the noise assessment.

(b) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "Identify and implement all feasible and reasonable noise mitigation measures where noise impacts are found to exceed the requirements of the NSW Industrial Noise Policy".

  Submission No. 59

Response

Noted and agreed.

ERM Power has added this commitment to the revised SoCs.

(c) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "The proponent will conduct noise monitoring in accordance with the requirements of the NSW *Industrial Noise Policy* from the commencement of operation until it can be adequately illustrated that noise limits applicable to the proposal are being met".

  Submission No. 59

Response

Noted and agreed.

ERM Power has revised the SoCs to include this commitment.

(d) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "All feasible and reasonable measures will be implemented to reduce noise levels from traffic accessing the site during construction".

  Submission No. 59

Response

Noted and agreed.

ERM Power has added this commitment to the revised SoCs.

4.25.3 Biodiversity

(a) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "A biodiversity offset strategy to improve or maintain biodiversity values in the area and aiming to improve connectivity of vegetation in the landscape will be developed and submitted to the DECC for approval prior to the commencement of works."

- With its submission, the DECC provided an attachment entitled Biodiversity Offset Template, which "is required to guide the layout and content for reporting the biodiversity values of the development and offset lands, and determine whether a 'maintain and improve' outcome will be achieved. In order to satisfy 'maintain and improve' objectives, secured offsets are generally required to mitigate areas and values lost from development impacts".

  Submission No. 59

Response

During the meeting with the DECC on 16 July 2008, the biodiversity offset strategy for the project was discussed (see minutes in Appendix B). At this time, the DECC raised concerns that the biodiversity offset strategy has not been developed pre-approval. ERM Power and its representatives explained that, for this type of project development of an offset methodology is not usually done prior to approval because the final pipeline alignment and construction method would not be finalised until post-approval (during the detailed design phase).

The DECC also explained that the Department's biobanking calculations should be used when developing the strategy, and identified the importance that the offset strategy is developed with someone trained to use the biobanking system. PB's biodiversity specialist indicated that the DECC's policy guidelines would be followed, and that the team is currently on the waiting list to do the training. ERM Power has amended the SoCs to build on that recommended by the DECC and to reflect the outcomes of the 16 July 2008 meeting.

(b) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "The boundary between the Peak Hill–Baldry Road that passes through Gingham's Gap where it is bounded by the Goobang National Park will be surveyed and mapped by a qualified registered surveyor."

- DECC recommends the addition of the following into the draft SoC:

  "Should the proposed pipeline route traverse national park estate, DECC will be consulted in regard to granting of an easement under S153 of the NP&W Act".

  Submission No. 59

Response

During the meeting with the DECC on 16 July 2008, the DECC's concerns regarding the alignment of Peak Hill–Baldry Road (MR 234) were discussed. At this time, the DECC explained that the real boundaries of Goobang National Park, the road reserve and the alignment of the road are unclear, and that it is very probable that some sections of the road fall into the National Park. ERM Power agreed that it was very difficult to determine the actual alignment of the road against the aerial imagery, road data and cadastral information available. Based on this uncertainty, for the purposes of the Environmental Assessment, ERM Power assumed the road did follow the alignment of the road reserve. As such, all maps in the Environmental Assessment showed the pipeline route following the alignment of the road reserve.

The DECC also identified during the meeting that there is an existing easement within the park that runs generally parallel to MR 234. The easement is believed to be a telecommunications easement. The DECC suggested that use of this easement for the gas pipeline could be a practical option and good outcome, and that this be investigated by ERM Power.

Discussions with personnel from the DECC Hurstville Office have confirmed that MR 234 is, in fact, excluded from the park. The Hurstville Office advised that the physical 40 metre width of the road was excluded from the park when it was gazetted in 1995. The *Gazette* notice, which is provided in Appendix H, specifically excludes the road from the park.

This provides a very good outcome for both ERM Power and the DECC, as alignment of the pipeline along MR 234 can be undertaken without affecting the boundaries of the park.

ERM Power has revised the SoCs to commit to consulting with Cabonne and Parkes Councils and the DECC to identify the most appropriate alignment of the pipeline through this area, such that it follows MR 234 and does not encroach on the National Park, and is positioned to minimise impact on the park during construction.

(c) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "During the survey and construction works adjacent to or within Goobang National Park, the proponent will liaise closely with DECC Parks and Wildlife Group representatives and have them on site during these works".

  Submission No. 59

Response

As explained above, it has been confirmed that Peak Hill–Baldry Road (MR 234) is excluded from Goobang National Park. As such, a survey of the park boundaries would not be required for this project. However, ERM Power agrees to liaise with DECC representatives during construction works adjacent to or within Goobang National Park. ERM Power has added a commitment to reflect this.

(d) Issue description

- DECC recommends item B2 be updated to read:

  "A maximum width of 10 metres of disturbance will occur within the construction zone for the pipeline in vicinity of areas of native vegetation. In all other areas, construction of the pipeline will not disturb an area in width of greater than 25 metres."

  Submission No. 59

Response

ERM Power acknowledges the value of all native vegetation in the vicinity of the pipeline and has tried to avoid, as far as reasonably practical, the need for clearing. However, due to constructability limitations, ERM Power cannot commit to this request to maximise the width of the construction corridor to 10 metres through all areas of native vegetation.

This issue was discussed during the 16 July 2008 meeting with the DECC. At that time, the DECC indicated that the reasoning behind this request for a 10 metre corridor through all native vegetation was that a power station project at Parkes includes a methodology that meets a construction corridor of this width. ERM Power suggested that the pipeline specifications and length are likely to be quite different than that required for the Wellington project.

Discussions with gas pipeline installation experts has indicated that ERM Power could achieve a 10 metre corridor width for a maximum three spans of pipeline; this equates to approximately 50–60 metres.

While ERM Power cannot commit to a 10 metre construction corridor through all native vegetation, it would reduce the construction footprint to a maximum 10 metre corridor through all vegetation listed as an Endangered Ecological Community (EEC). Surveys undertaken for the environmental assessment identified that most EECs were present as roadside corridors; the proposed pipeline would cross these roads, rather than run parallel to them so a 10 metre construction corridor would be achievable regardless of the construction method (i.e. trenching or directional drilling).

During the detailed design phase of the project, ERM Power would undertake a detailed mapping exercise to identify areas along the route where a 10 metre corridor is required. This would be undertaken in consultation with ecology specialists. This mapping exercise would also ensures that the construction corridor widths along the entire length of the gas pipeline route are selected to achieve the least impact on native vegetation, not only to minimise clearing but also to minimise edge effects and habitat fragmentation, and to prioritise necessary clearing to native vegetation that is in poor condition. The details of the construction corridor width along the entire route, and any management procedures relating

to this, will be included in the CEMP. ERM Power has revised SoC B2 to reflect these commitments.

As indicated in the Environmental Assessment, the width of the construction corridor would generally be 25–30 metres, while the width of the operation corridor for the pipeline would only be 20–25 metres. ERM Power is committed to rehabilitating the extra 5–10 metres of corridor not required for operation of the pipeline, where a full construction corridor width is required.

4.25.4 Aboriginal heritage

(a) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "To the satisfaction of the DECC, the proponent will revise the Aboriginal cultural heritage assessment for the proposal. This revision will include:

  (a) The identification of the historic and contemporary social, cultural and spiritual Aboriginal heritage values of the project area and the assessment of the cultural significance of these values to the local Aboriginal community. These values will be determined through a consultation process that is fully inclusive of all Aboriginal groups already known and identified as having a cultural heritage interest in the project area. This will provide the opportunity for all interested Aboriginal parties to participate in a project area reconnaissance inclusive of full inspections of all known Aboriginal archaeological sites. This will also provide for the appropriate review of the proposed pipeline route in light of any new Aboriginal significances identified.

  (b) The preparation of a strategy that details the measures to be adopted to avoid and/or minimise harm to Aboriginal objects contained within the three artefact scatters currently identified within the project area. This strategy will include (i) site induction information that assists in workforce avoidance of harm to objects; (ii) salvage and/or relocation measures that might be enacted to place objects out of the development footprint; and (iii) evidence of Aboriginal community agreement to any strategy proposed. If salvage measures are to include the transfer of Aboriginal object to Aboriginal community groups, the procedures for seeking a Care and Control Permit (under S85A of the NP&W Act) from the DECC will be outlined. This strategy will provide for the full reporting of such activities and their results to the DECC."

- DECC recommends the addition of the following into the draft SoC:

  "A suitably qualified person(s) in Aboriginal sites identification will be appointed during construction works to monitor activities and identify any items of Aboriginal heritage significance along the pipeline and power station site. The selection of this person(s) will be done in consultation with the relevant Aboriginal stakeholders."

  Submission No. 59

Response

As explained in Section 2.2.3, on 16 July 2008, ERM Power met with the DECC to discuss its issues raised regarding the Aboriginal heritage assessment, particularly as they related to these requested SoCs. The minutes to the meeting are provided in Appendix A. The outcomes of this meeting were such that the DECC revisited their position on the requirements of these SoCs. ERM Power has agreed to include the recommended SoCs but has amended them to reflect the outcomes of the discussions with the DECC.

(b) Issue description

- DECC recommends the addition of the following into the draft SoC:

  "The proponent will, as required under S91 of the NP&W Act, provide to DECC formal notification — in the form of completed Aboriginal Heritage Information Management System (AHIMS) site cards — of any Aboriginal cultural heritage sites identified during the original archaeological assessment or during the construction and/or maintenance of the pipeline."

  Submission No. 59

Response

Noted and agreed.

ERM Power has revised the SoCs to include this commitment.

(c) Issue description

- The GAC recommends the SoC be amended to provide for the following:

  "Should any Aboriginal relics or other items of Aboriginal heritage be identified within the study area, work in that area should cease immediately and the GAC should be contacted to discuss how to proceed".

  It is noted that the GAC has previously requested that this occur; however the EA does not provide for this.

- DECC recommends item AH4 be updated to read:

  "If any items of Aboriginal heritage significance are identified during construction activities, work will cease immediately and the DECC and Aboriginal stakeholders will be consulted. Development works will not commence until the item(s) have been duly investigated with the DECC and Aboriginal stakeholders".

  Submission No. 12, 59

Response

ERM Power disagrees with the GAC's requested SoC.

In February 2008, GAC provided feedback on the draft Aboriginal heritage assessment report prepared by AMBS. Included in this feedback was a request similar to that raised in this submission — GAC had requested the following:

"Should any 'relics' or other Indigenous sites be identified east of the Goobang National Park within the study area during the course of the development activities, work in that area should immediately cease and that GAC be contacted to discuss how to proceed".

At that time, AMBS contacted GAC to discuss this request. GAC agreed that this request was not an appropriate recommendation as it excludes the other Aboriginal organisations in the area.

The current submission again raises this issue, but extends the request to the entire study area. As this requested SoC also excludes the other Aboriginal organisations in the area, ERM Power does not believe this is an appropriate commitment, as all Aboriginal stakeholders in the study area should be provided the opportunity to be involved in the project.

ERM Power has amended draft SoC AH4 to reflect the recommendations of the DECC. This commits ERM Power to consult with Aboriginal stakeholders if items of Aboriginal significance are identified during construction of the project.

4.25.5 Pipeline watercourse crossings

Issue description

- The DPI recommends the addition of the following into the SoC:

  Issue: Liaison with DPI Fisheries.

  Commitment: "ERM Power will liaise with NSW DPI division of fisheries in respect of all waterway locations requiring the construction or upgrade of crossings".

  Relevant organisation: DPI Fisheries.

  Implementation timing: Prior to the relevant construction works.

  Submission No. 8A

Response

Noted.

As explained in Sections 4.7.5 and 4.22.7, SoC SW5 has been amended to commit ERM Power to also consult with the DPI during detailed design of the gas pipeline route to ensure the methods proposed to cross all waterways are appropriate.

4.25.6 Water and waste management

(a) Issue description

- DECC recommends items SW1 and SW3 be updated to read:

  "All possible pollutant materials will be stored in bunds compliant with the relevant Australian Standards and in accordance with WorkCover and DECC requirements."

  "Bunding for fuels, oils and chemicals will be compliant with relevant Australian Standards and in accordance with WorkCover and DECC requirements."

  Submission No. 59

Response

Noted and agreed.

ERM Power has amended SoCs SW1 and SW3 to include the requested commitments.

(b) Issue description

- DECC recommends item SW3 be altered to read:

  "Where possible, any uncontaminated stormwater will be reused at the site. Any potentially contaminated stormwater/wastewater will be disposed of appropriately".

  Submission No. 59

Response

Noted and agreed.

SoC SW3 has been amended to include the requested commitment.

(c) Issue description

- DECC recommends item SW3 be updated to read:

  "All waste water storage dams will be suitable lined to ensure a permeability of 1 x 10^{-9} m/s is met and be designed to allow for sludge removal without damage to the liner".

  Submission No. 59

Response

Noted and agreed.

SoC SW3 has been amended to include the requested commitment.

(d) Issue description

- DECC recommends item W2 be updated to read:

  "At the power station site, waste storage areas and procedures will be developed to ensure that wastes are appropriately segregated, recycled or reused and disposed of through the OEMP".

  Submission No. 59

Response

Noted and agreed.

SoC W2 has been amended as requested.

4.25.7 Access road construction

Issue description

- DECC recommends the addition of the following into the draft SoC:

  "Construct, including sealing, the site access road to the power station site via the Gulgong Road, as part of construction activities".

  Submission No. 59

Response

Noted and agreed.

The SoCs have been revised to include a commitment relating to this matter.

4.26 Conditions of Approval

Issue description

- With its submission, the DECC provided an attachment entitled Assessment of the Proposal and Justification of Proposed Amendments to the Draft Statement of Commitments. As well as justifying its proposed amendments, the attachment proposed Conditions of Consent relating to noise and vibration, and air quality.
- With its submission, the DPI Fisheries recommended Conditions of Approval relating to: the proponent carrying out the development in accordance with the EA and its appendices; preparation of a detailed Erosion and Sediment Control Plan; preparation of a vegetation rehabilitation plan for the riparian zone damaged during construction; construction techniques for waterway crossings; and consultation with the DPI.

  Submission No. 8A, 59

Response

ERM Power has considered the draft Conditions of Approval proposed by the DECC and DPI Fisheries. Table 4-2 identifies those proposed conditions that ERM Power requests be amended.

Table 4-2 Requested amendments to proposed Conditions of Approval

Proposed Condition of Approval	Agency	Requested amendment
Air quality		
The recommended Conditions of Approval contain a condition limiting power station operation to 10% of the year, unless further operation is required by NEMCO or in emergency circumstances.	DECC	Limiting operation to 10% of the year would constrain the ability of the power station to respond to network constraints as well as the commercial viability of the project to operate in free market. As such, ERM Power requests that the Conditions of Approval do not limit operation to a specific portion/percentage of the year.

Proposed Condition of Approval	Agency	Requested amendment
Construction and operation		
The applicant shall carry out the development in accordance with information set out in the Environmental Assessment and its Appendices.	DPI (Fisheries)	During development of the draft Statement of Commitments, ERM Power considered all recommendations made in the technical papers that were provided as Appendices to the Environmental Assessment. The Statement of Commitments that were developed, and the revised Statement of Commitments provided with this Submissions Report confirm ERM Power's commitments to constructing and operating the project in a manner that achieves minimal impact and effective management. As such, ERM Power considers that this Condition of Approval to "carry out the development in accordance with the information set out in the … Appendices" is not required.

5. Additional investigations

Several additional investigations have been undertaken since finalisation of the Environmental Assessment. Some of these investigations were undertaken in response to issues raised in the submissions, and some simply represent a continuation of the design development.

5.1 Noise wall

The feasibility of establishing a noise wall near the Nanima House property was investigated to determine whether it would effectively reduce the received noise levels to acceptable levels. The investigation report is provided in Appendix D, and its results are discussed in more detail in Section 4.23.

5.2 Water supply

A desk-top hydrogeological investigation was undertaken to determine the feasibility of establishing a groundwater bore on-site to supply the 20 ML per year required for operation of the power station. The investigation report is provided in Appendix E and its results are discussed in Section 4.22.3.

5.3 Pipeline design parameters

Table 7-1 of the Environmental Assessment listed the key pipeline design parameters proposed for the gas pipeline. These parameters were used to undertake the Preliminary Hazard Analysis (PHA) for the project (Technical Paper 6). The PHA concluded that the project would operate well within the DoP's risk criteria provided the gas pipeline was constructed and operated in accordance with *AS 2885:2007 Pipelines: Gas and Liquid Petroleum* and Dangerous Goods (General) Regulation 2007.

Further design development has indicated that the diameter of the gas pipeline would increase from the originally-proposed 350 millimetres (14 inches) to 558 millimetres (22 inches). Discussions with the hazard and risk specialist indicated that the risk levels for the pipeline would increase as the flow rate would increase for the pipeline rupture case. Given the risk levels associated with the original design parameters were well below the DoP's risk criteria, the proposed modification is unlikely to significantly alter the hazards and risks associated with the project (Pers. comm. John Bertram, Sherpa Consulting, 15 September 2008).

ERM Power has already committed to updating the PHA to a Final Hazard Analysis (FHA) during the detailed design phase to accommodate design changes such as these. The PHA noted that this would be a likely requirement for the proposed gas pipeline, as only preliminary design details were available at the time the PHA was undertaken. This commitment has been maintained in the revised SoCs (see Appendix B).

ERM Power also confirms that the change in pipeline diameter would not affect the width of the corridor necessary to construct the pipeline. On this basis, the scope of the environmental impacts associated with the construction of the pipeline, as assessed in the Environmental Assessment, would not be affected by the change in pipeline diameter.

ERM Power, therefore, requests that the project is approved to include a gas pipeline diameter of 558 millimetres (22 inches) on the basis of the above commitments.

5.4 Transmission connection

Section 7.1.3 of the Environmental Assessment, subheading 'Transmission connection', described the transmission connections that would link the proposed power station with the Wellington 330 kV substation:

> The proposed power station would connect directly to TransGrid's Wellington substation via two short 330 kV circuits, which would be wholly contained on TransGrid's land surrounding the substation. Each of these circuits would join the output of two generating units on approximately 40-metre high double circuit lattice steel towers adjacent to the proposed power station. The northern circuit would connect to a gantry structure at the southern end of TransGrid's substation. The southern circuit would connect to the northern end of the substation and undercross existing circuits entering the substation from the east (see Figure 7-4). Intermediate structures would comprise concrete or wood poles up to approximately 24 metres in height. Minor alignments of existing circuits would be contained within TransGrid's land. Only minor modifications would be required to the substation itself.

Since public exhibition of the Environmental Assessment, discussions have continued with TransGrid to further develop the connection design. TransGrid has now indicated a strong preference for both 330 kV connections from the power station to connect to the substation from its eastern side (rather than one line connecting from the south). This would require the erection of a third double circuit 330 kV lattice steel tower near the south-eastern corner of the substation. This tower would be shorter than the two 40-metre high towers that would be developed adjacent to the power station and would not add to the visual impact. Furthermore, the land on which this tower would be developed is cleared of vegetation (only an exotic grassy understorey is present), so no impact on biodiversity would be experienced.

TransGrid has also indicated that it may wish to relocate the wood pole line that would be overcrossed in the span from the power station to the third tower. This work would only involve a couple of spans and would occur on TransGrid's land.

ERM Power, therefore, requests that the project is approved to include development of a third double circuit 330 kV lattice steel tower near the south-eastern corner of the Wellington substation to enable the power station's transmission lines to connect into the substation from the east.

6. Environmental Assessment clarifications

Based on submissions received and further review of the Environmental Assessment following exhibition, the following clarifications and amendments to the document have been made.

6.1 Section 7.5.3 of the Environmental Assessment

Sentence 1, Paragraph 1 under the subheading "Directional drilling" on page 137 of the Environmental Assessment has been amended to read as follows:

> Directional drilling is a non-disruptive construction technique that would be used to cross major roads, rail crossings, the Macquarie and Little rivers, Buckinbah Creek and other sensitive environmental areas identified during the detailed design phase.

Sentence 1, Paragraph 2 under the subheading "Watercourse crossings" on page 139 has been amended to read as follows:

> The crossing of the Macquarie and Little rivers, and Buckinbah Creek would require the gas pipeline to be installed using a non-disruptive technique under these watercourses, most likely directional drilling.

6.2 Section 10.6.3 of the Environmental Assessment

Sentence 1, Paragraph 2 under the subheading "Construction" on page 262 of the Environmental Assessment has been amended to read as follows:

> At major river crossings, particularly the Macquarie and Little rivers, and Buckinbah Creek, directional drilling or micro-tunnelling would be adopted to minimise impacts to the riparian area and watercourse, as discussed in Section 7.5.3.

Paragraph 3 under the subheading "Construction" on page 262 has been amended to read as follows:

> For minor creek and river crossings, open cut techniques would be used, with over-pumping of water conducted where required.
>
> The NSW Department of Water and Energy (DWE) and the NSW Department of Primary Industries (Fisheries) (DPI Fisheries) would be consulted prior to construction to ensure that the proposed construction methods across watercourses are appropriate.

6.3 Table 10-1 of Technical Paper 3 — Noise and vibration assessment

Rows 8 and 9 of Table 10-1 on pages 42 and 43 of Technical Paper 3 have been corrected to read as follows:

Technique		Performance potential	Limitations	Feasibility	Viable
8. Noise barrier at receptor	Construction of a barrier or wall in proximity to receptor facades.	A barrier would be required to be of sufficient dimension to provide attenuation through noise path difference. Typical barrier performance would be expected to achieve 10 dB(A) reductions.	Barrier dimensions would need to account for the elevated stack exhaust source. Visual amenity and shadowing may occur. Low frequency noise impact would be minimal.	Consideration of a residential barrier is limited by potential reduction to received noise level, and barrier extent. The associated cost is considered reasonable. Prior agreement with resident required.	Yes
9. Noise barrier at source.	Construction of a barrier or wall in proximity to noise generating sources.	The barrier would be required to be of sufficient dimension to provide attenuation through noise path difference. Typical barrier performance would be expected to achieve potentially up to 5 dB(A) reductions.	Low frequency noise would not be efficiently attenuated. Exhaust stacks would remain the dominant noise source for received noise levels.	The acoustic performance is limited by the influence of the dominant exhaust noise sources. Associated cost is considered significant.	No

6.4 Table 3-8 of the Environmental Assessment

The Notes for Table 3-8 on page 51 of the Environmental Assessment have been amended to read as follows:

> Notes: 1: State Conservation Significance: V = Vulnerable, E1 = Endangered (TSC Act), E = Endangered (*Fisheries Management Act 1994*); 2: Recorded and predicted habitat; P = species recorded or predicted to occur along the gas pipeline, S = species recorded or predicted to occur at the power station site.

6.5 Table 7-1 in Technical Paper 1 — Biodiversity assessment

The header for Table 7-1 on page 77 – 79 of Technical Paper 1 has been amended to read as follows:

Name	TSC Act/FM Act[1]	EPBC Act[1]	Likely to be significantly affected	Reason for the outcome

Note 1 for Table 7-1 on page 79 of Technical Paper 1 has been amended to read as follows:

1. V = Vulnerable, E1 = Endangered (*Threatened Species Conservation Act 1995*), E = Endangered (*Fisheries Management Act 1994*)

6.6 Chapter E16 in Appendix E of Technical Paper 1 — Biodiversity assessment

Paragraph 1 under the subheading “Status” on page E-71 of Technical Paper 1 has been amended to read as follows:

The Trout Cod (*Maccullochella macquariensis*) is listed as endangered under both the *Fisheries Management Act 1994* and *Environmental Protection and Biodiversity Conservation Act 1999*.

6.7 Revised Statement of Commitments

The Wellington Gas-fired Peaking Power Station project Environmental Assessment identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts associated with the proposal.

After considering the issues raised in the public and stakeholder submissions, the draft Statement of Commitments for the Wellington Gas-fired Peaking Power Station project has been revised. The revised Statement of Commitments now reflects the need to present practical, outcomes-based commitments to facilitate management of impacts during pre-construction, construction and operation; they are provided in Appendix B.

Should the proposal be approved, ERM Power would implement the environmental management measures outlined in the revised Statement of Commitments. Any contractor selected to undertake further planning, design or construction of the proposed project would be required to undertake all works in accordance with these commitments.

7. Conclusions and next steps

This Submissions Report has addressed the outcomes of the consultative process conducted during and following the public exhibition of the Environmental Assessment for the proposed Wellington gas-fired peaking power station.

In addressing both compliance with legislative requirements and the requirements of the consultative process, this Submissions Report demonstrates that:

- ERM Power has considered all issues arising from the submissions and provided a written response to the issues raised (Chapter 4).
- The revised Statement of Commitments, which has been amended as a result of submissions received, demonstrates the proponent's commitment to a comprehensive management approach to reduce environmental impacts (Appendix B).

In consideration of the above, ERM Power seeks the approval of the Minister for Planning under Part 3A of the EP&A Act for the proposal as described in the Environmental Assessment and Section 1.1 of this Submissions Report.

8. References

Australian Government 2000, *National Standard for Occupational Noise [NOHSC: 1007 (2000)]*, National Occupational Health and Safety Commission, Australian Government, Canberra. Accessed on 4 August 2008 < http://www.ascc.gov.au/NR/rdonlyres/7C3EFB91-6C19-4161-A572-D5155EB20E50/0/Noise_standard_NOHSC1007_2000.pdf>

DEC 2005, *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*, Department of Environment and Conservation

Fairfull, S and Witheridge, G 2003, *Why do fish need to cross the road? Fish passage requirements for waterway crossings*, NSW Fisheries, Cronulla

NEPC 1998, *National Environmental Protection (Ambient Air Quality) Measure*, National Environmental Protection Council

NSW Government 2004, *Energy directions green paper*

NSW Heritage Office 1996a, *NSW Heritage Manual*

NSW Heritage Office 1996b, *Archaeological Assessment Guidelines*

NSW Heritage Office, 2001, *Assessing Heritage Significance*

NSW Heritage Office 2008, *Statement of Heritage Impacts*

Appendix A

Minutes from meeting with the
DECC on 16 July 2008

MINUTES

Wellington Gas-fired Power Station Environmental Assessment — DECC submission

MR 27.16
PB Sydney Office
Level 27, Ernst & Young Building, 680 George Street

Wednesday 16 July 2008
1:00pm–2:30pm

	Company	Name
Attendees:	ERM Power	Andy Pittlik (NSW Director)
	PB	Paul Greenhalgh (Project manager)
	PB	Liesl Garrett (Project coordinator) (by phone)
	PB	Peter Monsted (Biodiversity)
	AMBS	Chris Langeluddecke (Heritage)
	DECC	Carmen Dwyer (Head Pesticides, Operations and Planning)
	DECC	David Coote (by phone)
	DECC	Robert Taylor (by phone)
Apologies:	PB	Martin Predavec (Biodiversity)

Item	Discussion	Action
3-1	***Biodiversity — survey methodology***	
a	▪ Discussion held regarding the survey methodology adopted for the biodiversity assessment.	
b	▪ PB noted that, during public exhibition of the EA, DECC requested the GIS data (shape files) for the biodiversity surveys for the project. PB provided this information. o DECC explained that this data could not be opened.	
c	▪ PB confident with the level of accuracy of the mapping used. o used definitions/classifications based on those in TSC Act and EPBC Act o all roadside vegetation was taken into account (which is where best box gum woodland is found) o agreed that the maps provided in the report did not show the level of detail of the data collected.	PB to provide DECC with an ArcReader file containing all biodiversity survey data collected.
d	▪ DECC raised concerns regarding the targeted survey methodology, and believed that this hadn't occurred in potential habitat areas o PB responded that, in the course of the surveys, potential habitat areas for 3 flora species were identified, then targeted surveys were undertaken in these areas ▪ PB identified that two botanists were on site, one of which was just focussed	PB to clarify targeted survey methodology; clearly identify that two botanists were on site.

Item	Discussion	Action
	on targeted species surveys.	
3-2	***Biodiversity —10 metre construction corridor through native vegetation***	
a	▪ DECC provided background behind request for 10 metre corridor through native vegetation, which was that the URS power station project at Parkes has a methodology that meets a 10 metre construction corridor (they're actually achieving 7 metres). o ERM suggested that the pipeline specifications, length etc may be quite different (smaller pipe, shorter distance) than those required for the Wellington project.	ERM to provide pipeline specifications to DECC.
b	▪ ERM indicated that a 10 metre corridor could be achieved for short distances (e.g. 100 metres), but longer spans would be very difficult to construct within a restricted corridor. o What can be achieved is construct within a 25 metre corridor, then revegetate the area back to a 10 metre operational corridor.	PB to provide mark-ups on vegetation mapping to indicate where 10 metre corridor width could not be achieved through native vegetation; to provide on ArcReader file.
c	▪ DECC clarified that protection of EEC vegetation critical and that 10 metre restricted corridor needs to be met through these areas. o PB suggested that it should not be difficult to restrict to a 10 metre corridor through EECs, given that most are as roadside vegetation and the pipeline only traverses EECs for short distances.	
d	▪ ERM/PB indicated that it would not be practical to restrict the construction corridor to 10 metres through vegetation to the west of Goobang NP. o The pipeline route has been selected to follow a track for much of this part, but some widening would likely be required.	
3-3	***Biodiversity — offset strategy***	
a	▪ DECC noted that, for the offset strategy, all scattered paddock trees need to be included, even if not classified as 'woodland'; all vegetation to be cleared needs to be quantified. o When determining the proposed pipeline route, GIS, including high-resolution aerial photography was used to ensure avoidance of all possible paddock trees. o PB worked on the basis that during the detailed design the exact pipeline alignment would be determined and it would then be identified how that would affect vegetation, including all paddock trees. This information would be considered when developing the offset strategy.	
b	▪ DECC noted that developing the offset requirements, the condition of the vegetation is an important attribute; to use the Biobanking calculations, you specifically need variables relating to condition. o PB indicated that condition was assessed and recorded during the survey; this information is provided with the survey data on GIS.	
c	▪ DECC mentioned that the ongoing management regime is an important determinant when calculating the offset strategy.	
d	▪ Regarding the biodiversity offset methodology, PB indicated that any policy guidelines would be followed, but the strategy is not usually done prior to	In the submissions report, PB/ERM to provide clear

Item	Discussion	Action
	approval for this type of project, given that the exact pipeline alignment would not be determined until post-approval. o DECC acknowledged this, but indicated that it has a responsibility to the public so needs to be able to justify why a strategy has not been developed pre-approval. o As such, DECC indicated that it needs to be clearly explained how/when the biodiversity offset strategy methodology will be developed; and that this would be undertaken in consultation with DECC. o DECC identified importance that the strategy is developed with someone trained to use the Biobanking system. ➢ PB noted that the biodiversity specialists are currently on the waiting list to do the training.	explanations regarding timing and method of developing the biodiversity offset strategy.
3-4	***Biodiversity — survey of Peak Hill–Baldry Road through Goobang NP***	
a	▪ DECC explained that the real boundaries of Goobang NP, the road reserve and the alignment of the road are unclear; it is very probable that some sections of the road go through the NP.	
b	▪ PB/ERM assumed that the road went through the road reserve but agreed that it was very difficult to determine the actual alignment of the road through the NP; different data showed slightly different alignments.	
c	▪ PB/ERM noted that it is preferential for the pipeline to follow the road alignment, as this would reduce impact/would not require vegetation clearing. o While DECC agreed with this, it indicated that numerous issues are faced if the road does go through the park; under the NP&W Act, certain activities are not allowed within NPs, it can a very difficult and convoluted process to obtain approval (may require a Ministerial approval). o DECC believed the least difficult option would be for ERM to undertake a survey of the road alignment to clearly determine whether or not it traverses the NP.	
d	▪ DECC indicated that parallel to the road (but straighter) there is a cleared area (easement) containing comms cables. At the time of installation, the park rangers indicated a preference for the cables to go through that easement, rather than along the road. o DECC suggested looking into the use of this easement for the pipeline. o DECC indicated that the parks office (probably Hurstville) would probably have the details relating to this easement.	DECC to provide contact name for easement information. PB/ERM to investigate potential to use the easement for the pipeline.
4-1	***Heritage — assessment/consultation undertaken***	
a	▪ DECC acknowledged receipt of information from AMBS (through PB) prior to the meeting, which responded to adequacy review concerns relating to inadequacy of Aboriginal heritage assessment and consultation undertaken.	
b	▪ AMBS built on that information provided, and emphasised that: the DECC guidelines were followed; consultation was undertaken with ample time (around 8 weeks) prior to the survey commencing; and every effort was made to contact the Aboriginal stakeholders prior to, during and following the survey	

Item	Discussion	Action
	and assessment. AMBS does not believe much more could have been done with regards to the consultation process.	
c	▪ Having considered the information provided and following the further discussions, DECC was comfortable that due process was followed. ▪ Additionally, DECC acknowledged that it can be difficult to contact, maintain contact and involve Aboriginal stakeholders.	
4-2	***Heritage — request for revision of assessment/on-site Aboriginal heritage specialist during construction***	
a	▪ It was questioned whether, since further evidence was produced, are there grounds for revisiting DECC's request for a comprehensive revision of the Aboriginal heritage survey? ▪ DECC responded: o The report says that some scatters are not significant, but the scarred tree is, so the pipeline can go ahead without further survey. o DECC maintains that monitoring of high potential areas (particularly creek crossings) is required during construction. o It is usual practice for an on-site specialist to be present throughout construction. o It is important to involve Aboriginal communities to identify the sites then pass the information on to DECC.	
b	▪ AMBS indicated that not sure that monitoring during the process would provide much use for archaeological purposes; but monitoring for the involvement of Aboriginal community is a different story. o AMBS noted that it had previously been advised by two DECC Offices that monitoring is not effective. The Central and Southern DECC Offices had clearly informed AMBS that they do not believe monitoring to be archaeologically effective, and do not currently approve as a matter of course.	
c	▪ AMBS believes that, through avoidance of the most sensitive areas, the likelihood of coming across any new scatters is minimised.	
d	▪ ERM noted that it could agree to targeted monitoring of sensitive sites. o It was noted that there are a lot of sensitive sites, as there are a lot of creek crossings.	
e	▪ DECC indicated that there is a preference for the community to make the identification and the recording. o Need to give the Aboriginal groups a chance to be involved.	
f	▪ It was questioned that, if an Aboriginal group representative is unavailable, could ERM use a trained on-site environmental management representative to oversee construction; if anything identified, works would cease and specialist(s) would be called to identify, record, process etc.	
g	▪ The following strategy was agreed to be appropriate: o Provide the opportunity for a trained Aboriginal representative (who can identify, record and process (if necessary) Aboriginal heritage sites) to oversee construction of the pipeline in sensitive areas.	In the submissions report, PB/ERM to clearly commit to strategy for Aboriginal heritage specialist

Item	Discussion	Action
	o If an Aboriginal representative is unavailable, use an appropriately trained on-site Environmental Management Representative to oversee construction in sensitive areas; if items suspected/uncovered, work ceases in that area until an Aboriginal heritage specialist has identified, recorded and processed the item(s).	involvement during construction of the pipeline.

Rev A — Modified 7 August 2008.

Distribution: All meeting attendees; file.

Appendix B

Revised Statement of Commitments

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Environmental management systems				
Effective management of the potential environmental impacts of the project	M1	A construction environmental management plan (CEMP) will be prepared prior to construction, which will outline the operating conditions and temporary environmental measures to mitigate the impact(s) of construction activities.	Pre-construction	*Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources 2004) *Schedule 6 of the* Fisheries Management Act 1994
	M2	The CEMP will be implemented in accordance with this Statement of Commitments and any additional measures identified in the Submissions Report, and will address the conditions of any licences issued by government authorities.	Construction	
	M3	The CEMP will address, but will not be limited to: ▪ spill management ▪ stormwater management system ▪ erosion and sediment control ▪ dust management ▪ the minimisation of impacts to flora and fauna ▪ management of Aboriginal objects ▪ mitigation and/or construction measures for each watercourse crossing of the gas pipeline ▪ management measures to ensure the key threatening processes listed in Schedule 6 of the *Fisheries Management Act 1994* are addressed.	Pre-construction	
	M4	The CEMP will be periodically reviewed with the aim of continuous improvement.	Construction	
	M5	An operation environmental management plan (OEMP) will be prepared prior to the commencement of operation, which will outline details of all systems to meet the environmental management requirements for operation of the project. The approval of the Director-General of the Department of Planning will be sought for the OEMP prior to the commencement of operation.	Pre-operation	
	M6	The OEMP will address, but will not be limited to, both the ongoing monitoring requirements and the management actions carried over from the CEMP, including the requirement to manage clean and dirty (contaminated) water, waste, weeds, flora and fauna, and spills.	Pre-operation	The CEMP for the project, the Environmental Assessment and these SoCs

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Licensing				
Ensure all relevant licences are acquired for the project prior to commencement of operation	L1	If, during the detailed design phase, any activities for the project are required within 40 metres of waterfront land (which are not identified in the Environmental Assessment and Ministerial Approval), a control activity approval will be sought from the DWE under the *Water Management Act 2000*.	Design, Pre-construction	
	L2	Prior to commencement of operation, an environmental protection licence for operation of the power station will be sought from the DECC under the *Protection of the Environment Operations Act 1997*.	Pre-operation	*Protection of the Environment Operations Act 1997*
Communication and consultation				
Proactive consultation with the community and stakeholders	C1	A community and stakeholder involvement plan will be prepared to facilitate clear and open communication with the local community and stakeholders throughout construction and operation of the project. This communication will be implemented by an established Community Liaison Group. Where relevant, the plan will be consistent with the principles of *Community Engagement in the NSW Planning Systems* (PlanningNSW 2003).	Pre-construction	*Community Engagement in the NSW Planning Systems* (PlanningNSW 2003)
	C2	Newsletters and media releases will be used regularly to provide project updates. These will include contact details and phone numbers of relevant project staff.	Pre-construction, Construction	
	C3	A project website will be established prior to the commencement of pre-construction activities. The site will contain: ▪ periodic updates of work progress ▪ consultation activities ▪ proposed work schedules ▪ descriptions of relevant approval authorities and their areas of responsibility ▪ contact details and phone numbers of relevant project staff ▪ the 24-hour complaints telephone number and project email address. The project internet site will be regularly updated during the construction phase.	Pre-construction, Construction	
Proactive consultation with directly affected property owners	C4	Property owners will be consulted with regard to the implementation of mitigation measures that affect their property, and any issues raised will be addressed, where reasonable and feasible.	Pre-construction, Construction	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Effective and proactive management of complaints	C5	A 24-hour, toll-free complaints and community information telephone number will be established for the project and will be advertised prior to the commencement of pre-construction activities.	Pre-construction, Construction	
	C6	The project email address established during preparation of the Environmental Assessment will be maintained throughout the construction phase.	Pre-construction, Construction	
	C7	A complaints register to receive, record, track and respond to complaints within a specified timeframe will be established through the Community and Stakeholder Involvement Plan and will be implemented throughout the project. This register will be made available on ERM Power's website.	All	
Power station layout and design				
Minimise impact of the final design and layout of the power station on the environment and surrounding properties.	D1	Any changes in the final layout and orientation of the gas-fired turbines and exhaust stacks will be reviewed to ensure the environmental impacts associated with those changes are consistent with the predictions made in the Environmental Assessment. Any increase in the environmental impact of the final design will be assessed, and mitigation measures developed accordingly, prior to the commencement of construction.	Pre-construction	Chapters 7, 9 and 10 of the Environmental Assessment
Confirm the environmental performance of the selected gas-fired turbine model	D2	The final gas turbine supplier will be selected during the detailed design phase. Selection of the turbine model will be undertaken to ensure it complies with the environmental performance criteria and assumptions set out in the Environmental Assessment.	Pre-construction	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Gas pipeline design and construction				
Minimise impacts on the natural environment during construction of the pipeline	GP1	Directional drilling (or micro-tunnelling) will be used to construct the gas pipeline across the Macquarie River, Little River and Buckinbah Creek.	Pre-construction, Construction	
	GP2	During the detailed design phase of the project, each proposed watercourse crossing for the gas pipeline will be comprehensively assessed to ensure the pipeline profile is suitable to prevent scour or changes to river morphology. Crossing specific mitigation and/or construction measures will be identified at this time and implemented through the CEMP.	Design, Pre-construction	Part 3A of the *Rivers and Foreshores Improvement Act 1948*
	GP3	The Department of Water and Energy (DWE) and the Department of Primary Industries (DPI) (Fisheries Ecosystems Branch) will be consulted during the detailed design phase of the pipeline to ensure all proposed watercourse crossing techniques are appropriate.	Pre-construction	
	GP4	During the detailed design phase of the project, ERM Power will consult with all affected land owners regarding the final alignment of the gas pipeline. This will include consultation with relevant mineral exploration companies whose exploration licences may be traversed by the pipeline.	Pre-construction	DPI Minerals NSW
Noise and vibration				
Manage noise and vibration generated during construction, and minimise the effects of construction noise and vibration on surrounding sensitive receptors and the community.	N1	Through the CEMP, noise and vibration management measures, as identified in the Environmental Assessment and Submissions Report, will be implemented to reduce the noise and vibration impact of construction activities on sensitive receptors and the community.	Pre-construction, Construction	Section 9.3 of the Environmental Assessment
	N2	Construction hours will be restricted to: ▪ 7 am to 6 pm Monday to Friday ▪ 8 am to 1 pm Saturday ▪ no work on Sundays or public holidays.	Construction	AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites* BS 5228 *Noise and Vibration Control on Construction and Open Sites*

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
	N3	Works outside standard construction hours will be limited to: ▪ any works that do not cause construction noise to be audible, or construction vibration to be felt, at any sensitive receptors ▪ the delivery of material required outside of construction hours by the Police or other authorities for safety reasons ▪ emergency work to avoid the loss of lives, property and/or to prevent environmental harm ▪ any other work as agreed after appropriate consultation with affected residences, the Department of Environment and Climate Change (DECC) and local councils.	Construction	AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites* BS 5228 *Noise and Vibration Control on Construction and Open Sites*
	N4	Prior consultation will be undertaken with and written notification provided to nearby residents that may be affected by noise or vibration generating activities.	Construction	
	N5	Public address systems (including amplified telephone ringers) used at any construction site will not be used outside normal construction hours except in accordance with commitment N3 above. Public address systems will be designed to limit noise spillage off-site.	Construction	AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites*
	N6	All reasonable and feasible measures will be implemented to reduce noise levels from traffic accessing the power station and gas pipeline construction sites.	Construction	
Identify if construction noise goals set prior to construction are being met	N7	Construction noise and vibration monitoring will be undertaken at sensitive receptors during construction to determine the effectiveness of mitigation strategies.	Construction	*Industrial Noise Policy* (EPA 2000)
Manage noise and vibration generated during operation to minimise effects on surrounding sensitive receptors and the community	N8	A reasonable and feasible approach will be adopted to limit operational noise impacts in accordance with relevant guidelines and conditions of approval. The approach to management of operational noise impacts will be finalised during detailed design. Noise management will be undertaken in consultation with relevant property owners and will be flexible enough to take account of the findings of commitment N9 below.	Design, Operation	*Industrial Noise Policy* (EPA 2000)
	N9	All reasonable and feasible noise mitigation measures will be identified and implemented where noise impacts are found to exceed the requirements of the NSW *Industrial Noise Policy*.	Design, Operation	*Industrial Noise Policy* (EPA 2000)

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
	N10	Management of the operational noise impacts from the power station will be undertaken considering the following zones of impact: ▪ Zone 1: compliance zone — up to 35 dB(A) $L_{Aeq, 15min}$ ▪ Zone 2: noise management zone — >35–40 dB(A) L_{Aeq} (for the amelioration of internal noise environments) ▪ Zone 3: acquisition zone — >40 dB(A) L_{Aeq} (for the negotiation of property procurement).	Operation	
	N11	Operational noise mitigation measures will be further reviewed and optimised during detailed design and installed at sensitive receptors identified and set out in Section 9.3 of the Environmental Assessment and Technical Paper No. 3 – *Noise and Vibration Assessment*.	Design, Operation	Section 9.3 of the Environmental Assessment Technical Paper No. 3 – *Noise and Vibration Assessment*
Obtain negotiated agreement with owner of Nanima House	N12	The proponent shall secure a negotiated agreement with the owner of Nanima House to ensure potential noise impacts at this property are adequately mitigated.	Pre-operation	
Monitor operational noise from the power station	N13	Within 90 days of the commencement of operation and during a period in which the development is operating under design loads and normal operating conditions, the proponent will undertake a program to confirm the noise emissions performance of the development. The program will meet the requirements of the DECC and will include, but not necessarily be limited to: ▪ noise monitoring consistent with the guidelines provided in the New South Wales Industrial Noise Policy (EPA, 2000) to assess compliance at the sensitive receptors identified and set out in Section 9.3 of the Environmental Assessment and Technical Paper No. 3 – *Noise and Vibration Assessment* ▪ methodologies for noise monitoring ▪ location of noise monitoring ▪ frequency of noise monitoring ▪ identification of monitoring sites at which pre- and post development noise levels can be ascertained ▪ details of any entries in the Complaints Register relating to noise impacts.	Operation	*Industrial Noise Policy* (EPA 2000)

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Air quality				
Manage air quality impacts during construction to minimise the effects on surrounding sensitive receptors and the community	A1	Through the CEMP, air quality management measures as identified in the Environmental Assessment and Submissions Report will be implemented to reduce the air quality impact of construction activities on sensitive receptors and the community.	Pre-construction, Construction	Section 9.2 of the Environmental Assessment
	A2	Dust monitoring will be undertaken at selected locations to determine compliance with ambient air quality standards.	Construction	*Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005b)
	A3	Disturbed areas will be stabilised and/or revegetated as soon as possible to prevent or minimise wind-blown dust.	Construction	
	A4	In dry, windy conditions, dust suppression measures (such as watering, spraying or covering where required) will be implemented on disturbed areas.	Construction	
	A5	During the construction period, water will be utilised as necessary for dust suppression.	Construction	
	A6	On-site speed limits for all vehicles will be enforced to minimise dust generation.	Construction	
	A7	Vehicles transporting materials to and from the site will be covered immediately after loading to prevent wind-blown dust emissions and spillages.	Construction	
Manage air quality impacts during operation to minimise the effects on surrounding sensitive receptors and the community	A8	A reasonable and feasible approach will be adopted to limit air quality impacts in accordance with relevant guidelines and conditions of approval.	Design, Operation	
	A9	Periodic extractive monitoring will be undertaken to demonstrate compliance with operating in-stack limits.	Operation	
	A10	A regular and documented maintenance and inspection program will be implemented for all plant items.	Operation	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Greenhouse gas generation				
Minimise energy consumption and greenhouse gas generation	G1	Through the CEMP, an efficient construction program will be implemented to minimise greenhouse gas emissions, which will involve: ▪ adequately maintaining and efficiently operating all equipment (i.e. not unnecessarily revving or idling engines) ▪ staging works to minimise double-handling ▪ giving preference to locally-sourced materials during procurement.	Pre-construction, Construction	
	G2	Through the OEMP, a maintenance plan detailing the level of maintenance, timeframes, specific measures and anticipated outcomes will be prepared to ensure the power station is operated efficiently, thus minimising greenhouse gas intensity.	Pre-operation, Operation	
Aboriginal heritage				
Minimise the impact on identified and potential sites/objects of Aboriginal significance	AH1	A one-day drive-by survey of the finalised, pegged pipeline route will be undertaken to confirm the final development impact area. During this survey, a target Aboriginal heritage survey of the gas pipeline from east of the Macquarie River crossing to the power station site (Three Mile Flat) will be undertaken. Representatives of Aboriginal groups consulted during the Environmental Assessment will be provided the opportunity to participate in this activity	Design, Pre-construction	
	AH2	If the detailed design phase results in realignment of the pipeline route to anywhere outside of the buffered corridor surveyed during the Environmental Assessment, Aboriginal heritage specialists will be consulted, and reassessment undertaken by a qualified Aboriginal heritage specialist.	Design	
	AH3	The proponent will provide the opportunity for a suitably-trained Aboriginal representative(s) (who can identify, record and process, as necessary) Aboriginal heritage sites) to be appointed during construction works to monitor activities along the gas pipeline. If an Aboriginal representative is unavailable, a suitably-trained on-site Environmental Management Representative will be appointed during construction works to monitor activities along the gas pipeline.	Pre-construction, Construction	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
	AH4	Strategies to avoid and/or minimise impacts to Aboriginal heritage items identified during the Environmental Assessment, during the targeted survey of Three Mile Flat (see SoC AH1) and during construction activities will be prepared and implemented through the CEMP. These strategies will include, but will not be limited to: ▪ site induction information that assists in workforce avoidance of harm to Aboriginal heritage items ▪ salvage and/or relocation measures that might be enacted to place items out of the development footprint ▪ opportunities given to Aboriginal stakeholders to assist in preparation of these management strategies ▪ procedures to seek a Care and Control Permit (under Section 85A of the *National Parks and Wildlife Act 1974*) from the DECC if salvage measures are to include the transfer of heritage items to Aboriginal community groups ▪ procedures to provide DECC with formal notification (under Section 91 of the *National Parks and Wildlife Act* 1974) of any identified Aboriginal heritage items.	Pre-construction, Construction	
	AH5	If any items of Aboriginal heritage significance are identified (or suspected) during construction activities, work to do with that activity will cease immediately and the DECC will be consulted. Development works will not recommence until the item(s) have been duly investigated with the DECC. Aboriginal stakeholders will also be consulted and every effort will be made to involve them in the investigations.	Construction	
	AH6	The proponent will, as required under Section 91 of the *National Parks and Wildlife Act 1974*, provide formal notification to the DECC — in the form of completed Aboriginal Heritage Information Management System (AHIMS) site cards — of any Aboriginal cultural heritage sites identified during the original heritage assessment, during the detailed design phase or during the construction and/or maintenance of the pipeline.	Construction, Operation	
Historic heritage				
Minimise the impact on identified and potential sites/objects of historic significance	HH1	If the detailed design phase results in realignment of the pipeline route to anywhere outside of the buffered corridor surveyed during the Environmental Assessment, historic heritage specialists will be consulted, and reassessment undertaken by a qualified historic heritage specialist.	Design	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
		The proponent will undertake a targeted historic heritage survey of the gas pipeline from east of the Macquarie River crossing to the power station site (Three Mile Flat) in conjunction with that being undertaken for Aboriginal heritage (see SoC AH1). Any historic heritage items identified will be assessed for significance, and mitigation and/or management measures will be developed and implemented through the CEMP for the project.	Pre-construction, Construction	
	HH2	If any items of non-Aboriginal heritage significance are identified during construction, work will cease immediately and a qualified non-Aboriginal heritage specialist will be consulted.	Construction	
	HH3	The proponent will prepare a Statement of Heritage Impact associated with any proposed noise mitigation measures at Nanima House. Any noise mitigation measures would be implemented in accordance with the provisions of such a statement.	Pre-construction, Construction	
Visual impact				
Minimise the visual impact of the project	V1	The colour and texture of infrastructure at the power station and compressor station will be selected to blend with the surrounding landscape and will incorporate non-reflective materials.	Pre-construction, Construction	
	V2	Vegetation screening using suitable plant species will be implemented at the power station and compressor station, and other locations (in negotiation with third parties) as identified and set out in Section 9.4 of the Environmental Assessment and Technical Paper No. 5 – *Visual Impact Assessment*.	Pre-operation	Section 9.4 of the Environmental Assessment Technical Paper No. 5 – *Visual Impact Assessment*
	V3	All affected property owners will be consulted to identify the most appropriate type and style of landscape planting on their properties.	Pre-construction, Construction	
	V4	Any areas disturbed during construction of the power station that are not required for operation (i.e. construction car park and laydown area) will be revegetated with suitable plant species.	Pre-operation, Operation	
Minimise light spill from the project	V5	Lighting at the power station and compressor station will be arranged to minimise the direct line of site from sensitive receptors.	All	AS4282(INT)-1997 *Control of Obtrusive Effects of Outdoor Lighting*
	V6	Security lighting at the power station and compressor station will not spill onto sensitive receptors.	All	
	V7	Large floodlights at the power station and compressor station will not be used other than for emergency lighting.	All	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Biodiversity				
Minimise the impact on biodiversity during construction of the project	B1	If the detailed design results in realignment of the pipeline route to anywhere outside the buffered corridor surveyed during the Environmental Assessment, reassessment will be undertaken by a qualified ecologist in accordance with DECC guidelines.	Design	
	B2	A maximum 10-metre wide pipeline construction corridor will occur through all areas of native vegetation listed as an endangered Ecological Community. During detailed design of the gas pipeline, the proponent will undertake a detailed mapping exercise to identify those areas of native vegetation where a 10 metre corridor width could/could not be achieved. This exercise will use the vegetation mapping developed for the biodiversity assessment and will use high resolution aerial imagery. It will be led by the specialists who undertook the biodiversity assessment and in consultation with representatives of DECC. This will ensure that the construction corridor width across the entire route is selected to achieve the least impact on the native vegetation, not only to minimise clearing but also to: ▪ minimise edge effects and habitat fragmentation ▪ prioritise clearing of native vegetation that is in poor condition. The details of the construction corridor width along the route, and any management procedures relating to this, will be included in the CEMP for implementation during construction.	Design, Construction	
	B3	Through the CEMP, biodiversity management measures as identified in the Environmental Assessment and Submissions Report will be implemented to reduce the impact of construction activities on biodiversity. A revegetation plan and weed and pest management measures will be included in the CEMP.	Pre-construction, Construction	Section 9.5 of the Environmental Assessment Technical Paper No. 1 – *Biodiversity Assessment*
	B4	During the detailed design phase, the DECC, and Cabonne and Parkes Councils, will be consulted to determine the most appropriate (and least impacting) alignment of the gas pipeline along the Peak Hill–Baldry Road (MR 234) in the vicinity of Goobang National Park.	Design, Pre-construction	
	B5	During any construction works adjacent to or within Goobang National Park, the proponent will liaise closely with representatives of DECC Parks and Wildlife Group.		

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
	B6	Clearing protocols will be implemented for removal of habitat trees, including: ▪ All habitat trees to be cleared will be identified by survey and marked. ▪ Marked habitat trees and corridors of retained trees linking marked habitat trees with the nearest uncleared (secure) habitat areas will be left standing after initial vegetation clearance for at least 24 hours to encourage dispersal of animals, after which time standing habitat trees and corridors of retained trees may be felled. ▪ If habitat trees are in short supply, artificial nest sites (nest boxes) will be installed in adjacent (secure) habitat before clearing.	Pre-construction, Construction	
	B7	Rehabilitation of cleared areas not required for operation will occur in a progressive manner as construction proceeds. This rehabilitation will: ▪ comprise the planting of a range of locally occurring and sourced native shrubs, trees and ground cover plants ▪ include logs, dead trees and stumps in landscaping works ▪ include foraging plant species ▪ incorporate existing native vegetation where possible.	Construction	
	B8	Soil management practices will be implemented to ensure that: ▪ no transfer of stockpiles occurs between areas ▪ exotic species are not distributed by wind or watercourses.	Construction	
Ensure biodiversity impacts are minimised during operation of the project	B9	Through the OEMP, management measures and monitoring programs will be implemented to ensure operation of the project does not impact on biodiversity. Such measures will include: ▪ ongoing monitoring of impacts ▪ rehabilitation ▪ ongoing management of weed invasion in the pipeline easement to ensure weeds do not spread.	All	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Minimise the residual impacts of the project on biodiversity	B10	A biodiversity offset strategy to improve or maintain biodiversity values in the area and aiming to improve connectivity of vegetation in the landscape will be developed in consultation with the DECC. The DECC's Biodiversity Offset Template will be used as a guide and the department's Biobanking system will be used to calculate the offset requirements. The personnel developing the offset strategy will make every effort to have completed the Biobanking training provided by the DECC. The biodiversity offset strategy will be developed and submitted to the DECC for approval prior to construction commencing.	Pre-construction, Construction	
Traffic and access				
Maintain traffic movements and minimise traffic delays on the road network during construction of the project	T1	Through the CEMP, traffic management measures as identified in the Environmental Assessment and Submissions Report will be implemented to reduce the impact of construction activities on the road network.	Pre-construction, Construction	
	T2	During the detailed design phase a specialist heavy equipment transport contractor with specific experience in lifting and transporting large plant items will be engaged to determine and confirm the most appropriate transport route for this infrastructure to the power station site. The contractor will obtain the necessary approvals from the relevant authorities and will prepare a plan to ensure safe transport of these large plant items.	Pre-construction, Construction	
	T3	A basic left turn and auxiliary right turn treatment will be developed at the access point to the power station site on Gulgong Road.	Pre-construction, Construction	*Road Design Guide* (Roads and Traffic Authority (RTA) 2000)
	T4	The site access road to the power station site via Gulgong Road will be constructed and sealed as part of the construction activities.	Construction	
	T5	Site-specific traffic control plans will be developed where works affect roads or at access points to work sites.	Pre-construction, Construction	*Traffic Control at Work Sites Guidelines* (RTA 2003)
	T6	All road shoulders will be maintained at their existing standard to cater for any cyclist and pedestrian movements.	Construction	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Manage access to private properties during construction of the project	T7	Access arrangements to private properties during construction of the gas pipeline will be determined in consultation with the land owners.	Pre-construction	
	T8	Where access to private properties is temporarily affected by construction of the project, alternative access arrangements to an equivalent standard will be provided (where reasonable and feasible), or alternative arrangements will be agreed in consultation with the land owner.	Pre-construction	
Maintain safe and effective traffic management during operation of the project	T9	The access arrangement at the power station site on Gulgong Road will be maintained throughout operation of the project to allow heavy vehicle deliveries and maintain safe intersection performance.	Operation	
Soil and water quality				
Minimise impacts on water quality during construction of the project	SW1	Through the CEMP, soil and water quality management measures as identified in the Environmental Assessment and Submissions Report will be implemented to reduce the impact of construction activities on soil and water quality. These measures will include: ▪ installing erosion and sediment controls ▪ diverting surface run-off away from disturbed areas ▪ planning construction works to minimise the length of time soils are disturbed ▪ planning construction activities for the pipeline at watercourse crossings to coincide with dry periods where possible ▪ containing and managing spoil and bentonite slurry from directional drilling activities for the pipeline and removing these materials from site ▪ clearly identifying areas required to be disturbed to ensure such disturbance is minimised and as little vegetation is cleared as possible ▪ restricting construction traffic to defined roads ▪ ensuring all possible pollutant materials will be stored in bunds compliant with the relevant Australian Standards and in accordance with WorkCover and DECC requirements.	Pre-construction, Construction	*Soils and Construction: Managing Urban Stormwater* (Landcom 2004)
	SW2	All water utilised for dust suppression (see SoCs A4 and A5) will be of a quality that does not present a risk to human health or the environment.	Construction	
	SW3	The gas pipeline will be located below the bed of all watercourses to prevent impacts on water quality and flow.	Pre-construction, Construction	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Minimise impacts on water quality during operation of the project	SW4	A site stormwater and wastewater management system will be developed, in accordance with best practice management, during detailed design of the power station. The stormwater and wastewater management system will: ▪ give particular attention to the provision of safe overland flow paths across the site, especially through areas that currently drain to the upper reaches of the unnamed tributary on the site ▪ ensure the peak stormwater flows from the site do not increase as a result of the development ▪ implement on-site stormwater detention and/or stormwater reuse to control any increase in run-off ▪ ensure all wastewater storage dams will be suitably lined to ensure a permeability of 1×10^{-9} metres/second, and will be designed to allow for sludge removal without damage to the liner ▪ ensure no discharge of wastewater occurs from the site ▪ ensure wastes are appropriately segregated, recycled or reused and disposed of ▪ ensure all bunding for fuels, oils and chemicals will be compliant with relevant Australian Standards and in accordance with WorkCover and DECC requirements ▪ maximise reuse of captured stormwater for purposes such as site irrigation, stock watering and general washdown/maintenance requirements ▪ implement measures to prevent erosion/scour of any diversion channel or stormwater discharge point.	Design, Pre-construction	*AUS-Spec #1 (Development and Design Construction Specifications)* *NSW State Groundwater Policy Framework* (DWE) *NSW Rivers and Estuaries Policy* (DWE) *NSW Farm Dams Policy* (DWE)
	SW5	The DWE will be consulted during preparation of the site stormwater management system.	Design, Pre-construction	
	SW6	The site stormwater and wastewater management system will be implemented through the OEMP for the project.	Operation	
	SW7	Regular monitoring of the quality of stormwater discharges will be undertaken to ensure the system at the power station site is operating effectively.	Operation	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Hazard and risk				
Minimise hazards and risks associated with the project	HR1	During the detailed design phase, consideration will be given to the identified issues and recommendations in the Environmental Assessment and preliminary hazard analysis (PHA) to ensure design of the project minimises potential hazards and risks.	Design	Section 9.7 of the Environmental Assessment Technical Paper No. 6 – *Preliminary Hazard Analysis* Australian Standard *AS 2885:2007 Pipelines: Gas and Liquid Petroleum, Design and Construction*
	HR2	Construction and operational hazards and risks associated with noise, air quality, biodiversity, and soil and water quality will be managed through implementation of the commitments identified above.	All	
	HR3	Prior to the commencement of operation, the PHA would be updated to a final hazard analysis (FHA), where necessary. In the event of significant design changes occurring during the detailed design phase, this revision of the PHA would occur prior to the commencement of construction.	Pre-operation	
	HR4	Risk management and emergency response procedures will be developed and implemented through the OEMP for the project. All surrounding land owners within 1 kilometre of the power station, who will be affected by the evacuation zone will be consulted during preparation of these procedures to ensure procedures relating to their properties are carefully addressed and incorporated.	Pre-operation	
	HR5	Any hazardous substances delivered to/removed from the power station site will be transported and handled according to appropriate regulations. Different hazardous substances will be carried in separate (appropriate) containers at separate times.	Operation	*Australian Code for the Transportation of Dangerous Goods by Road and Rail*

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Waste and resource management				
Minimise waste generated, and maximise reuse and recycling during the project	W1	Through the CEMP, construction waste management measures will be implemented to ensure waste generation is minimised, reuse and recycling is maximised, and management of waste (including classification and disposal) is undertaken in accordance with the relevant provisions of legislative guidelines.	Pre-construction, Construction	*Protection of the Environment Operations Act 1997* *Waste Avoidance and Resource Recovery Act 2001* *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (DEC 1999c)
	W2	At the power station site, waste storage areas and procedures will be developed to ensure that wastes are appropriately segregated, recycled or reused, and/or disposed of.	Design, Operation	As above
	W3	During construction of the gas pipeline, generated waste (particularly bentonite slurry from directional drilling) will be removed from site and disposed of according to relevant legislative guidelines.	Construction	As above
	W4	The waste minimisation hierarchy principles of avoid/reduce/recycle/dispose will be applied to all aspects of the project.	All	*Waste Avoidance and Resource Recovery Act 2001*
Public safety				
Ensure public safety	PS1	All construction compounds and work areas will be fenced to limit public access during construction.	Construction	
	PS2	Appropriate signage will be installed at construction compounds and work areas to maximise public safety.	Construction	

Objective	Ref No.	Commitment	Timing	Guiding principle(s)
Property impacts				
Provide an appropriate level of compensation in relation to property acquisitions	P1	The licence required to construct the 100 kilometre pipeline will be sought under the *Pipelines Act 1967* and in accordance with section 13 of that Act. As part of this process, consultation will be undertaken with all affected land owners. All property acquisitions (partial and full) will be negotiated in accordance with, and compensation assessed under the provisions of, the *Land Acquisition (Just Terms Compensation) Act 1991*.	Pre-construction	NSW *Pipelines Act 1967* NSW *Land Acquisition (Just Terms Compensation) Act 1991*
Socio-economic				
Maximise economic benefits to the local community	SO1	Where practicable, local contractors and suppliers will be used for the provision of labour and services during construction of the project.	Construction	
	SO2	Where practicable, local contractors and suppliers will be used for the provision of services, particularly maintenance, during operation of the project.	Operation	
Services and utilities				
Minimise disruption to utilities and services	SU1	Utilities and services potentially affected by construction of the project will be identified and requirements for their diversion, protection and/or support identified. Alterations to services will be determined in negotiation with the service providers and disruptions to services resulting from the project will be minimised and advised to customers.	Pre-construction	
Ancillary facilities				
Minimise environmental and social impacts from construction of temporary ancillary facilities	AF1	Sites chosen for temporary ancillary facilities will satisfy the environmental criteria provided in the Environmental Assessment, unless otherwise approved through the CEMP.	Pre-construction	Chapters 9 and 10 of the Environmental Assessment

Appendix C

Table of submissions and issues

Submission number	Respondent	Issue	Sections where issues addressed
1	Individual submission	Project development and alternatives	4.6.3
		Power station location	4.8.1, 4.8.3, 4.8.5
		Air quality	4.11.2, 4.11.7
		Noise and vibration	4.12.3
		Visual impact	4.13.1
		Biodiversity	4.14.1
		Impact on heritage	4.18.3
		Land use and property	4.19.1
		Socio-economic impacts	4.20.1, 4.20.2
		Geology and soils	4.21
		Hydrology and water quality	4.22.1
2	Individual submission	Project development and alternatives	4.6.3
		Power station location	4.8.1, 4.8.3, 4.8.5
		Air quality	4.11.2, 4.11.7
		Noise and vibration	4.12.3
		Visual impact	4.13.1
		Biodiversity	4.14.1
		Historic heritage	4.18.3
		Land use and property	4.19.1
		Socio-economic impacts	4.20.1, 4.20.2
		Geology and soils	4.21
		Hydrology and water quality	4.22.1
3	Individual submission	Consultation	4.3.2
		Air quality	4.11.1, 4.11.6
		Noise and vibration	4.12.3
		Geology and soils	4.21
		Hydrology and water quality	4.22.1
		Miscellaneous comment on environmental impact	4.24

Submission number	Respondent	Issue	Sections where issues addressed
4	Individual submission	Project development and alternatives	4.6.3
		Power station location	4.8.1, 4.8.3, 4.8.5
		Air quality	4.11.2, 4.11.7
		Noise and vibration	4.12.3
		Visual impact	4.13.1
		Biodiversity	4.14.1
		Historic heritage	4.18.3
		Land use and property	4.19.1
		Socio-economic impacts	4.20.1, 4.20.2
		Geology and soils	4.21
		Hydrology and water quality	4.22.1
5	Individual submission	Description of the project	4.7.1, 4.7.3
		Power station location	4.8.1, 4.8.4, 4.8.5
		Air quality	4.11.6, 4.11.7
		Noise and vibration	4.12.3, 4.12.7
		Visual impact	4.13.2
		Hazard and risk	4.16.1, 4.16.2
		Historic heritage	4.18.1, 4.18.3
		Land use and property	4.19.2
		Hydrology and water quality	4.22.1
		Miscellaneous comment on environmental impact	4.24
6	Individual submission	Objections to the project	4.1
		Description of the project	4.7.1, 4.7.3
		Power station location	4.8.1, 4.8.5
		Air quality	4.11.1, 4113, 4.11.3, 4.11.6
		Noise and vibration	4.12.3, 4.12.5, 4.12.9
		Visual impact	4.13.2
		Biodiversity	4.14.2
		Hazard and risk	4.16.2
		Historic heritage	4.18.1, 4.18.4, 4.18.5
		Land use and property	4.19.1

Submission number	Respondent	Issue	Sections where issues addressed
7	Individual submission	Objections to the project	4.1
		Consultation	4.3.1, 4.3.2
		Power station location	4.8.1, 4.8.3
		Air quality	4.11.1,4.11.4
		Noise and vibration	4.12.1, 4.12.3
		Visual impact	4.13.1, 4.13.3
		Land use and property	4.19.2
		Socio-economic impacts	4.20.4
8A	NSW Department of Primary Industries (Fisheries Ecosystems Branch) (DPI Fisheries)	Description of the project	4.7.4, 4.7.5
		Biodiversity	4.14.3, 4.14.4, 4.14.5
		Conditions of Approval	4.26
		Draft Statement Commitments	4.25.5
8B	NSW Department of Primary Industries (Mineral Resources) (DPI Minerals)	Land use and property	4.19.3
9	Individual submission	Project objectives and need	4.5.1
		Project development and alternatives	4.6.1
10	Individual submission	Project objectives and need	4.5.1
		Hazard and risk	4.16.2
		Hydrology and water quality	4.22.3
11	Individual submission	Objections to the project	4.1
		Project development and alternatives	4.6.2
		Power station location	4.8.1
		Air quality	4.11.1, 4.11.2, 4.11.3
		Noise and vibration	4.12.3
		Traffic and transport	4.17
		Visual impact	4.13.1
		Land use and property	4.19.2
		Hydrology and water quality	4.22.1

Submission number	Respondent	Issue	Sections where issues addressed
12	Gallanggabang Aboriginal Corporation	Environmental assessment process	4.2.3
		Consultation	4.3.3, 4.3.4
		Power station location	4.8.2, 4.8.5, 4.8.9
		Air quality	4.11.2, 4.11.6, 4.11.7
		Noise and vibration	4.12.5
		Visual impact	4.13.1, 4.13.3
		Aboriginal heritage	4.15.1, 4.15.2
		Hazard and risk	4.16.2
		Historic heritage	4.18.2
		Hydrology and water quality	4.22.1
		Draft Statement Commitments	4.25.4
13	Individual submission	Visual impact	4.13.2
		Historic heritage	4.18.1, 4.18.3
14	Individual submission (student)	Power station location	4.8.1
		Air quality	4.11.2
		Noise and vibration	4.12.3
15	Individual submission (student)	Power station location	4.8.1
		Air quality	4.11.2
		Noise and vibration	4.12.3
		Aboriginal heritage	4.15.1
16	Individual submission (student)	Power station location	4.8.1
		Air quality	4.11.2
		Noise and vibration	4.12.3
		Biodiversity	4.14.1
		Land use and property	4.19.1
		Socio-economic impacts	4.20.2
17	Individual submission (student)	Power station location	4.8.1
		Air quality	4.11.2
		Noise and vibration	4.12.3
		Socio-economic impacts	4.20.1, 4.20.2
18	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.7
		Noise and vibration	4.12.3
		Visual impact	4.13.1
		Hydrology and water quality	4.22.1

Submission number	Respondent	Issue	Sections where issues addressed
19	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.2, 4.11.3
		Hydrology and water quality	4.22.1
20	Individual submission (student)	Power station location	4.8.1
		Air quality	4.11.3
21	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.3, 4.11.6
		Noise and vibration	4.12.4
		Visual impact	4.13.1
22	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.2
		Noise and vibration	4.12.3
		Hydrology and water quality	4.22.1
23	Individual submission (student)	Greenhouse gas emissions	4.10
		Air quality	4.11.3
		Noise and vibration	4.12.8
24	Individual submission (student)	Greenhouse gas emissions	4.10
		Air quality	4.11.1
25	Individual submission (student)	Objections to the project	4.1
		Project development and alternatives	4.6.2
		Air quality	4.11.3
		Noise and vibration	4.12.4
26	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.3
27	Individual submission (student)	Objections to the project	4.1
		Project development and alternatives	4.6.2
		Air quality	4.11.3
		Noise and vibration	4.12.3
		Hydrology and water quality	4.22.1

Submission number	Respondent	Issue	Sections where issues addressed
28	Individual submission (student)	Description of the project	4.7.2
		Greenhouse gas emissions	4.10
		Air quality	4.11.3
		Noise and vibration	4.12.4
		Hydrology and water quality	4.22.1
29	Individual submission (student)	Objections to the project	4.1
		Project development and alternatives	4.6.2
30	Individual submission (student)	Objections to the project	4.1
		Power station location	4.8.1
31	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.3
		Socio-economic impacts	4.20.3
32	Individual submission (student)	Project objectives and need	4.5.1
		Air quality	4.11.3
		Biodiversity	4.14.1
		Miscellaneous comment on environmental impact	4.24
33	Individual submission (student)	Air quality	4.11.3
34	Individual submission (student)	Power station location	4.8.1
		Air quality	4.11.3
		Biodiversity	4.14.1
35	Individual submission (student)	Project development and alternatives	4.6.2
		Power station location	4.8.1
		Air quality	4.11.2, 4.11.3
		Land use and property	4.19.1
		Hydrology and water quality	4.22.1
36	Individual submission (student)	Objections to the project	4.1
		Project development and alternatives	4.6.2
		Air quality	4.11.3
		Hydrology and water quality	4.22.1

Submission number	Respondent	Issue	Sections where issues addressed
37	Individual submission (student)	Air quality	4.11.3
		Aboriginal heritage	4.15.1
38	Individual submission (student)	Objections to the project	4.1
		Power station location	4.8.1
		Air quality	4.11.2
		Noise and vibration	4.12.3
		Socio-economic impacts	4.20.3
		Miscellaneous comment on environmental impact	4.24
39	Individual submission (student)	Air quality	4.11.3
		Biodiversity	4.14.1
40	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.3
41	Individual submission (student)	Objections to the project	4.1
42	Individual submission (student)	Air quality	4.11.3
43	Individual submission (student)	Project development and alternatives	4.6.2, 4.6.4
		Power station location	4.8.1
		Air quality	4.11.2,4.11.3
44	Individual submission (student)	Objections to the project	4.1
		Power station location	4.8.6
45	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.2
46	Individual submission (student)	Air quality	4.11.3
47	Individual submission (student)	Objections to the project	4.1
		Air quality	4.11.2
48	Individual submission (student)	Consultation	4.3.2
		Project development and alternatives	4.6.2
		Description of the project	4.7.4
		Biodiversity	4.14.2
49	Individual submission (student)	Miscellaneous comment on environmental Impact	4.24

Submission number	Respondent	Issue	Sections where issues addressed
50	Individual submission (student)	Objections to the project	4.1
		Socio-economic impacts	4.20.3
51	Individual submission	Objections to the project	4.1
52	Individual submission	Objections to the project	4.1
53	Individual submission	Objections to the project	4.1
		Power station location	4.8.1
54	Individual submission	Miscellaneous comment on environmental impact	4.24
55	Petition (48 signatures)	Power station location	4.8.1
56	Individual submission (student)	Air quality	4.11.3
		Noise and vibration	4.12.6
		Socio-economic impacts	4.20.2, 4.20.3
57	Individual submission	Project development and alternatives	4.6.2
		Air quality	4.11.3, 4.11.7
		Noise and vibration	4.12.3,4.12.8
		Description of the project	4.7.2
		Power station location	4.8.1, 4.8.3
		Aboriginal heritage	4.15.1
		Socio-economic impacts	4.20.2, 4.20.5
58	NSW Department of Water and Energy (DWE)	Environmental assessment process	4.2.1
		Planning and statutory context	4.4.1
		Hydrology and water quality	4.22.2, 4.22.3, 4.22.4, 4.22.5, 4.22.6, 4.22.7
59	NSW Department of Environment and Climate Change (DECC)	Environmental assessment process	4.2.1, 4.2.2
		Planning and statutory context	4.4.1, 4.4.2
		Hydrology and water quality	4.22.4
		Draft Statement Commitments	4.25.1, 4.25.2, 4.25.3, 4.25.4, 4.25.6, 4.25.7
		Conditions of Approval	4.26

Submission number	Respondent	Issue	Sections where issues addressed
60	Individual submission	Objections to the project	4.1
		Consultation	4.3.1, 4.3.2
		Project development and alternatives	4.6.2
		Description of the project	4.7.2, 4.7.3
		Power station location	4.8.1, 4.8.3
		Air quality	4.11.1, 4.11.3, 4.11.4, 4.11.5, 4.11.6, 4.11.7, 4.11.8
		Noise and vibration	4.12.1, 4.12.2
		Visual impact	4.13.1
		Hydrology and water quality	4.22.3, 4.22.5

Appendix D

Noise wall investigations

Wellington Gas-fired Power Station Project

Noise barrier investigation

September, 2008

ERM Power

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Appendix A Noise contour impact isopleths

1. Introduction

Parsons Brinckerhoff (PB) was engaged by ERM Power to undertake a preliminary assessment of the potential changes to the noise impacts at Nanima House, with consideration to the placement of a noise barrier between the house and the proposed Wellington Gas-fired Power Station.

2. Scope of works

An initial sensitivity analysis was carried out to assist with determining 'optimal' barrier location. This initial work indicated that the barrier would need to be placed within 10 metres of the dwelling. Further distances of separation (up to 20 metres) are possible; however, this increase in distance from the receiver requires proportional increases to barrier height and length.

The separation distance of 10 metres has been adopted for the purposes of this assessment. A nominal length of 10 metres has also been assumed.

It should be noted that in reality, careful consideration to barrier placement would be required and it is expected that the length of the barrier would need to be, at a minimum, twice the length of the building façade.

3. Predicted noise levels

Predicted noise levels, under neutral conditions with the +5 dB low frequency modifying correction factor, are provided in Table 3-1.

Table 3-1 Predicted noise levels with barrier adjacent Nanima House

Parameter	Model scenario		
	1	2	3
Distance between barrier and building façade (nominal)	10 metres	10 metres	10 metres
Barrier length (nominal)	10 metres	10 metres	10 metres
Barrier height (nominal)	3 metres	5 metres	7 metres
Predicted noise level in Environmental Assessment	43 dB(A)	43 dB(A)	43 dB(A)
Predicted noise level with barrier in place	**38.5 dB(A)**	**35 dB(A)**	**31.5 dB(A)**
Predicted noise reduction	**-4.5 dB(A)**	**-8 dB(A)**	**-11.5 dB(A)**
Compliance with 35 dB(A) goal	No	Yes	Yes
Compliance with 40 dB(A) (INP night-time ANL	Yes	Yes	Yes

Noise contour impact isopleths for the predicted noise reductions shown in Table 3-1 are provided in Appendix A.

4. Discussion

The Environmental Assessment demonstrated that gradient wind flows and temperature inversions were not a frequent feature for the region. Irrespective, an increase of up to 1.5 dB(A) may be expected under temperature inversion conditions.

The preliminary modeling results shown in Table 3-1 indicate that the placement of a barrier that is of height relative level (RL) +5 metres would reduce noise levels at the building façade by 8 dB, resulting in a night-time noise level of about 35 dB(A). Although a barrier height of RL +7 metres would provide further reductions, this height is considered impractical from a constructability point of view.

The following assumptions have been made during this preliminary assessment:

- A receiver height of R.L. +1.2 metres was adopted.
- The Nanima property is at approximately 368 metres Australian Height Datum (AHD) and the proposed exhaust stack tips at 366 metres AHD.
- The barrier would be located at 368 metres AHD (i.e. the same level as the property), as it was assumed that construction of the barrier would be affected by topographical features (i.e. sloping ground).
- Effects relating to flanking, barrier top edge/side edge reflection and transmission coefficients have not been accounted for in the preliminary assessment. These effects would be considered in the detailed design phase.
- The predictions assume that an insertion loss more than 10 dB greater than transmission loss would be associated with any installed barrier. It is expected that barrier construction would need to be of concrete material (or similar) with a maximum thickness of 100 millimetres and a superficial weight in the order of 200 kg/m^2.
- From a constructability viewpoint, the barrier design would need to consider wind loading (rated at wind loadings in the order of 2 kPa (or greater)).
- From a visual amenity viewpoint, experience has shown that for a barrier height in the range of 5 metres and greater, detailed consideration must be given to potential shadow effects.

5. Conclusion

The results of the preliminary assessment indicate that a barrier with minimum height of RL +5 metres, located at a distance of 10 metres from the residential façade nearest to the proposed power station at Nanima House could reduce noise levels to the extent that the power station would comply with the prescribed night-time noise criterion of 35 dB(A) under neutral meteorological conditions.

Further detailed studies would need to be undertaken to refine the final location and physical dimensions of the barrier.

Appendix A

Noise contour impact isopleths

Figure 1: No barrier

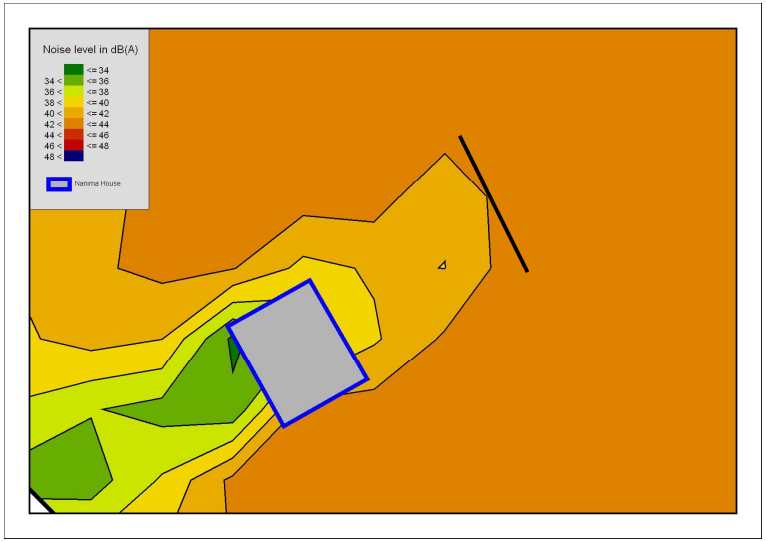

Figure 2: Barrier @ 3 metres (10 metres separation)

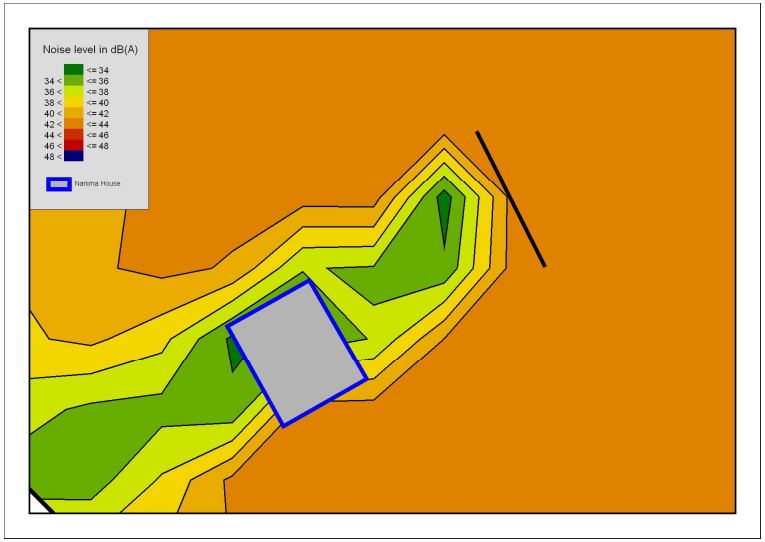

Figure 3: Barrier @ 5 metres (10 metres separation)

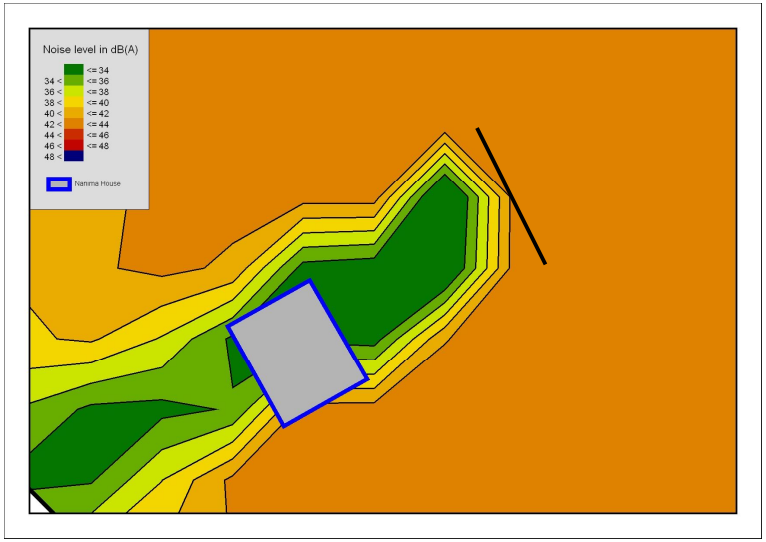

Figure 4: Barrier @ 7 metres (10 metres separation)

Appendix E

Hydrogeological investigations

Hydrogeological Assessment Wellington Power Station

September, 2008

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Figure 1 Location Map
Figure 2 Surface geology and groundwater bores

1. Introduction

Parsons Brinckerhoff (PB) was engaged by ERM Power to undertake a desktop hydrogeological assessment for the Wellington Power Station project site, located in the central west region of NSW (Figure 1). The objective of the assessment is to study the groundwater resources at the site, and assess the potential to extract up to 20 ML/yr from a groundwater bore on site.

The proposed power station is located off Gulgong Road, approximately 4km north-east of Wellington (Figure 1). The power station site comprises an undulating area of cleared land with scattered trees that drains to the south.

1.1 Scope of works

The scope of works undertaken is in accordance with PB's proposal dated 11 August 2008.

The scope of works for the hydrogeological investigation comprised the collation and assessment of hydrogeological information for the site. The available data that was assessed included:

- Dubbo geology map
- Dubbo topographic map
- Hydrogeology reports.

In addition a search of the Department of Water and Energy (DWE) groundwater database for registered bores in the area was undertaken. The bore data obtained includes bore depths, standing water levels, water quality (salinity), yields and lithology information. However, it is important to note that the results of the groundwater database search includes information on groundwater bores collected over a long period of time, therefore the results must be used with caution.

2. Geology

According to the 1:250,000 Dubbo Geology map, sheet no SI 55-4 (Geological Survey of NSW, 1971) the site is directly underlain by Ordovician aged sediments of the Oakdale Formation (Figure 2). The Formation is comprised of mafic to intermediate lava, volcaniclastic breccia and conglomerate, sandstone and siltstone and scattered areas of limestone from volcanic sources deposited deep under the sea. Along the eastern edge of the site, younger undifferentiated Silurian deposits overlie the Ordovician sediments. The Silurian sediments generally comprise shale, chert and tuff.

A local northwards plunging anticline is located within the project site. Anticlines are usually recognized by a sequence of rock layers that are progressively older toward the center of the fold because the uplifted core of the fold is preferentially eroded to a deeper stratigraphic level relative to the topographically lower flanks. The strata dip away from the center, or crest, of the fold.

3. Hydrogeology

Groundwater in the region is present in alluvial aquifers, and fractured and porous rock aquifers. The primary aquifers in the area include:

- Bell Valley Alluvium (Groundwater Management Area 020)
- Molong Limestone (Groundwater Management Area 810)
- Lachlan Fold Belt Province (Groundwater Management Area 811).

The mapped Bell Valley alluvium does not extend to the actual project site.

3.1 Bell Valley Alluvium

The Bell River is a major tributary of the Macquarie River, with their confluence near Wellington. The alluvial deposits associated with the river extend up to 30m in thickness, and are essentially within the same system as the Macquarie Valley alluvium, which is incorporated in the Upper Macquarie Alluvium GWMA. Although legislatively they are separate units, physically they can be considered one.

The Bell Valley Alluvium groundwater management area has a sustainable yield of 7,000ML/yr, and current extraction is 2,100ML/yr. Predominant groundwater use is for irrigation of pasture and vegetables.

Water quality is good, averaging 500mg/L TDS (http://www.anra.gov.au/topics/water/overview/nsw/gmu-bell-valley-alluvium.html). The mapped Bell Valley alluvium does not extend to the project site.

3.2 Lachlan Fold Belt and Molong Limestone

The Lachlan Fold Belt groundwater management area covers a very large area of 210,585 km^2, and comprises fractured rocks, including the Molong Limestone GWMA.

Fractured rock aquifers have secondary permeability i.e. water is held in and moves along fractures in the rocks. More than one aquifer may be able to be accessed with a single bore, and these may or may not be connected, depending on the pressure head of each aquifer and the geological formations. Fractured rock aquifers generally have very low storage capacity and yield at most 5 L/sec.

The total entitlements are currently at 60,570 ML/year (CSIRO 2008). The sustainable yield has been calculated by DWE as 1,057,599ML/year which is based on 5% rainfall recharge, plus a percentage of river leakage, and a percentage for environmental provisions (30 – 40%). Therefore the available water is 997,029 ML/year.

The aquifers in the limestone formations tend to have greater yields as fracturing is very significant, and consequently they are sometimes used for irrigation. Where they are connected to a recharge path, such zones provide a useful aquifer. Low salinity water with yields to around 10 L/s can be obtained from the better sites, with water occurring under essentially confined conditions. The average salinity measured as total dissolved solids (TDS) is around 1,000mg/L (http://www.anra.gov.au/topics/water/gmu/gmu-molong-limestone.html).

The Molong Limestone groundwater management area has a sustainable yield of 7,000ML/yr, which has been derived by assuming long term average annual recharge is 5%

of rainfall in the limestone outcrop areas, which are estimated to be about 25% of the total GWMA area. A 30% environmental factor was allowed (i.e. sustainable yield is 70% of recharge).

3.3 Groundwater bore search

A search of the DWE groundwater database indicates there are 112 registered boreholes within a five kilometer radius of the site (Figure 2). The data extracted includes bore depths, standing water levels (SWL), water quality (salinity), yields and lithological information.

One bore, GW016601, is located on the site, while there are two other bores, GW016606 and GW016647 located within a 1km radius of the project site. All three bores are used for domestic &/or stock purposes, and are less than 12.2 m in depth. Other information including SWL, water quality or lithology was not available from the database.

Only two bores accessing water from the fractured rock aquifers has information on SWL, lithology and yield. Both bores are screened in basalt, and depth to water is between 7.3mBGL (GW025296) and 7.9mBGL (GW025235). Yields of 0.3L/s to 1.4L/s were obtained. However the information was obtained in 1968.

Most bores in the area access the alluvial aquifers associated with the Macquarie and Bell Rivers and their tributaries to the west and south west of the site. On average, the bores in the area have depths of approximately 20mBGL and are mostly used for domestic/stock and irrigation purposes. Minimal water quality information is available in the database for the bores, however the average salinity for the Bell River alluvium and the Macquarie River alluvium GWMAs is generally 500 mg/L (http://www.anra.gov.au/topics/water/overview/nsw).

4. NSW Legislation

4.1 Licensing

Under the NSW water management regime, approval under the Water Management Act 2000 (WMA 2000) or Water Act 1912 (WA 1912) from the Department of Water and Energy (DWE) is required to use water for all purposes, including extraction of groundwater via any type of bore.

For the aquifers discussed in this report the WA 1912 applies, and an application form is required for a groundwater licence (Part 5 of the Water Act 1912) by the DWE. Construction of groundwater infrastructure can not commence without approval from DWE. The term of a groundwater licence is generally 5 years.

In July 2008, the NSW government announced a state wide embargo on the issuing of new Part 5 Water Licences (groundwater) in the NSW Murray Darling Basin. Where previously an embargo relating to major alluvial groundwater systems was in place, the embargo now includes all alluvial systems, and porous and fractured rock aquifers. The embargo applies to new licences for irrigation and other commercial purposes.

However there are some exemptions, one is for new groundwater licences for fractured and porous rock aquifers where the project is approved under Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW Government Gazette, July 2008). The embargo for alluvial aquifers is likely to remain in place, and there are no exemptions.

4.2 Trading

Although new licences in the alluvial systems are currently embargoed (and likely to remain so), trading within the groundwater source is allowed. However, the trading market for groundwater in the central west region is not common, and therefore the cost of purchasing a groundwater licence (price/ ML) and potential volumes are unknown.

5. Conclusions

- The site is underlain by Ordovician and Silurian sediments which form part of the Lachlan Fold Belt and the Molong Limestone groundwater management areas.
- Groundwater yields in the limestone can be up to 10L/s, however the yields for the Lachlan Fold Belt Province are generally less than 5L/s.
- Based on available data from the DWE groundwater bore database search, the maximum recorded yield for a bore located within 5km of the site in the Lachlan Fold Belt GWMA is 1.4L/s.
- Water quality of fractured rocks is variable, ranging from an average of 1,000mg/L (TDS) in the limestone aquifers and up to 3,000mg/L (TDS) for aquifers associated with Lachlan Fold Belt. These values are only averages over a very large area, and more site specific information would be required.
- The quality of groundwater in the alluvium is likely to be around 500mg/L (TDS).
- There is potential for increased groundwater yields in areas associated with the structural features of the north-western plunging anticline.
- It is likely that groundwater yields up to 20 ML/yr could be sourced from a bore(s) located on the project site.

6. Recommendations

Based on the information available, PB recommends that the next stage of investigations be initiated, which would comprise a drilling a testing program.

Firstly, an application must be made to DWE for a groundwater license to construct a test bore. A test bore is required to undertake an assessment of the aquifer to determine the long term bore yield and water quality. At the same time an application should also be made for an industrial/commercial groundwater bore, as this will save time and money by not having to reapply once the test bore is granted.

The project will be approved under Part 3A of the *Environmental Planning and Assessment Act 1979*, therefore the embargo on new fractured and porous rock aquifers in the NSW portion of the Murray-Darling Basin does not apply to this project. Although the two approvals are linked, the bore license can be applied for at any time, during or after the Part 3A approval process.

Following approval from DWE, a drilling contractor would be engaged to drill and construct the test bore. Aquifer testing on the constructed bore would be undertaken to determine if the bore yields and quality are satisfactory. If successful the driller can be instructed to construct the industrial/commercial bore, without the additional costs of re-mobilising.

7. References

CSIRO (2008). Water availability in the Macquarie-Castlereagh. A report to the Australian Government from the CSIRO Murray-Darling Basin Sustainable Yields Project. CSIRO, Australia.

Department of Industry, Tourism and Resources (2005). Dubbo 1:250 000 Topographic Map, SI55-04, Edition 3. Geoscience Australia.

Geological Survey of NSW (1971) 1:250,000 Dubbo geology map, Sheet no SI 55-4.

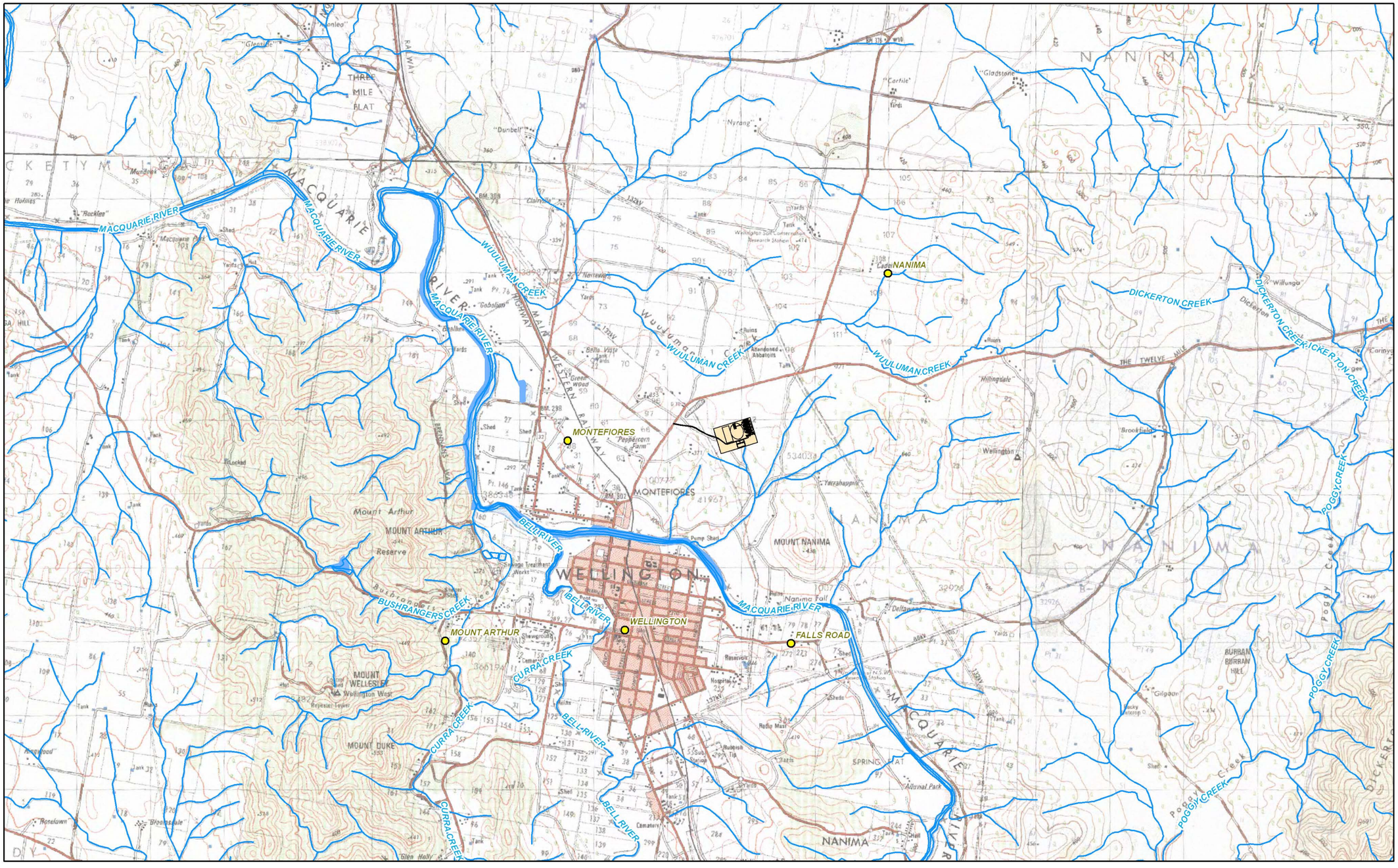
http://www.anra.gov.au/topics/water/gmu/

NSW Government Gazette No. 84, (4th July 2008). Embargo on any further applications for Part 5 Water Licences - New South Wales Inland Groundwater Shortage Zones Order No. 1 2008, Water Act 1912.

Figures

PARSONS BRINCKERHOFF

Figure 1: Site Location



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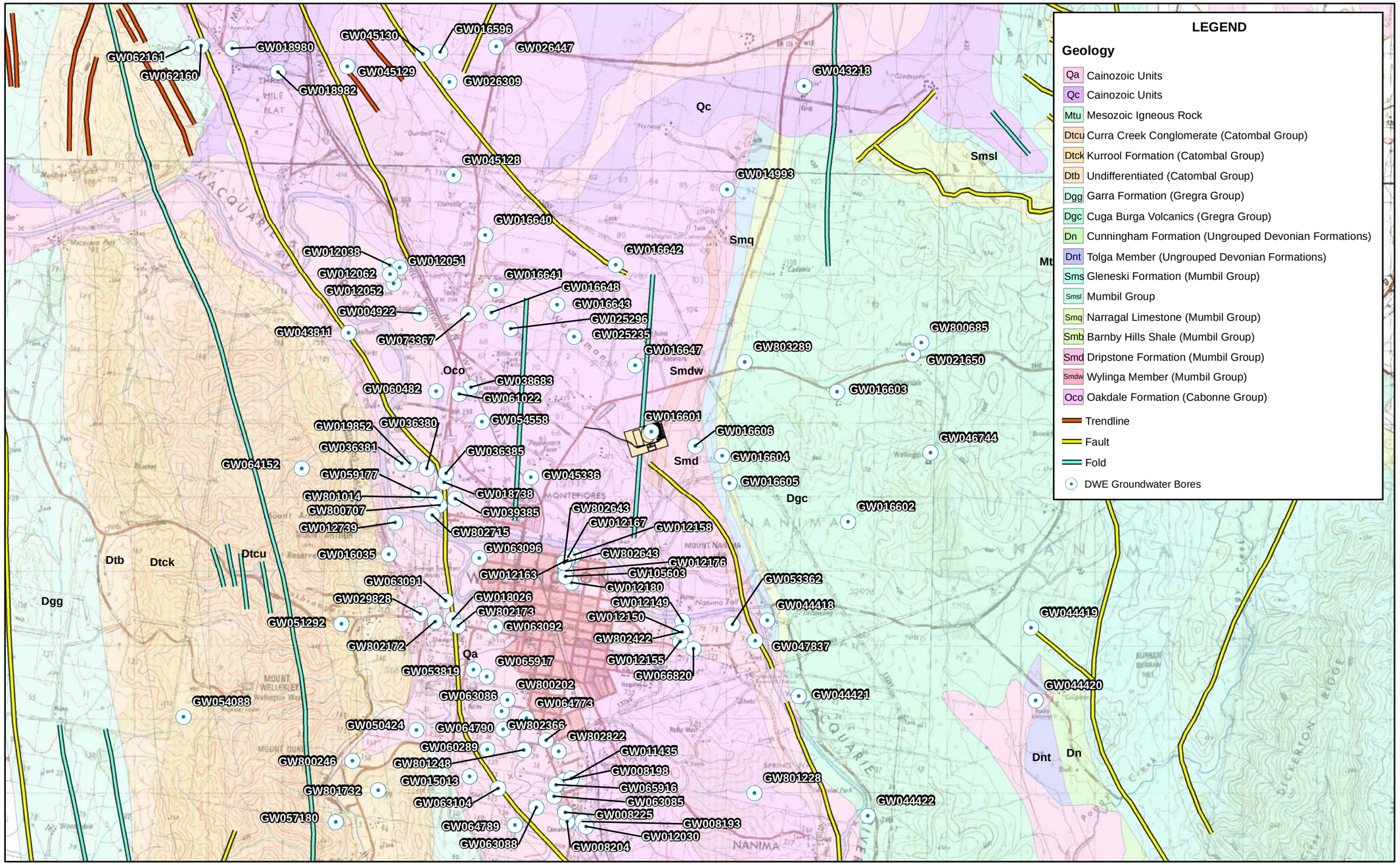
PARSONS BRINCKERHOFF

Figure 2: Geology



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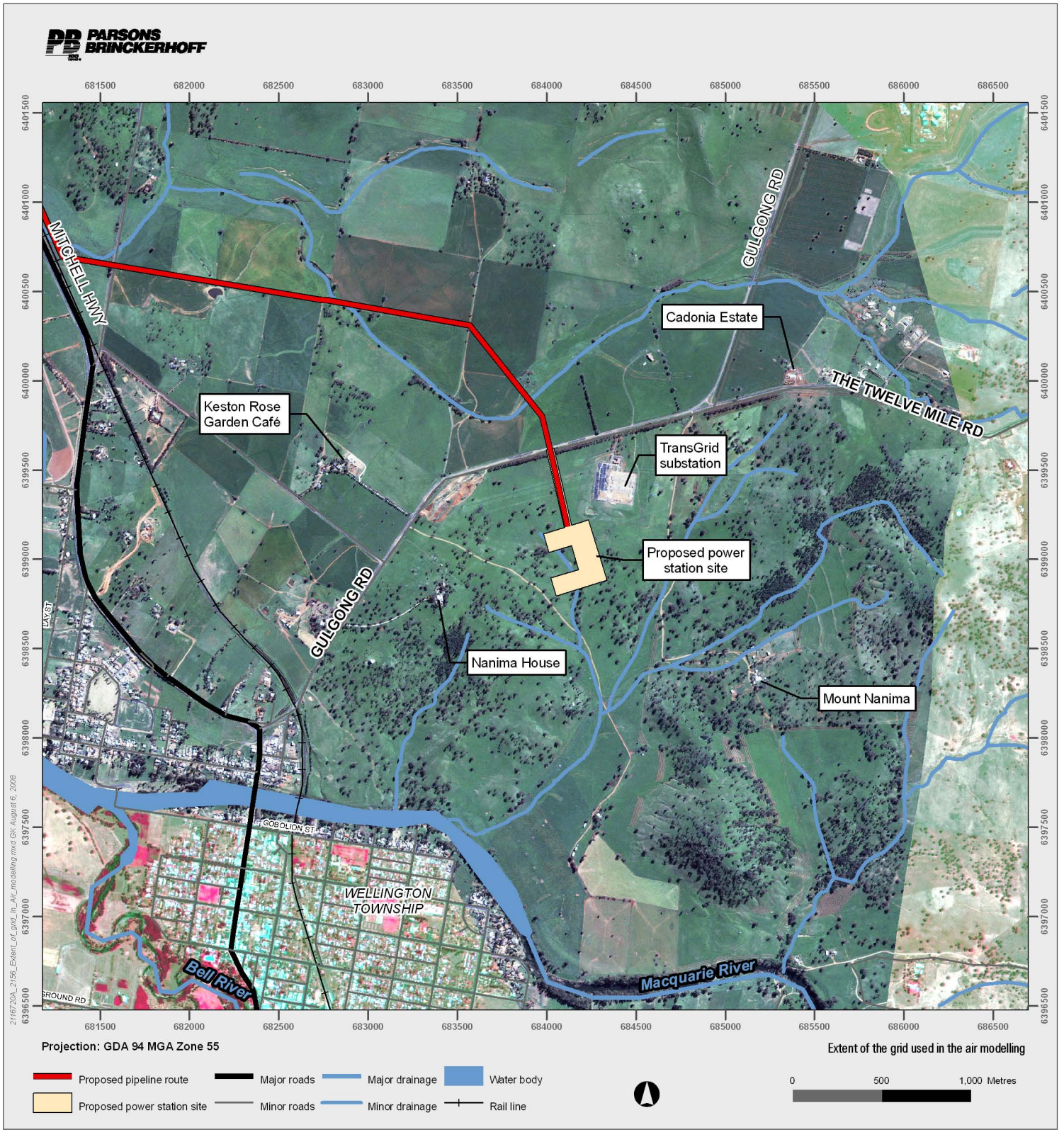
Appendix F

Extent of the grid used in the air modelling for the power station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6396500
MITCHELL HWY
GULGONG RD
Cadonia Estate
THE TWELVE MILE RD
Keston Rose Garden Café
TransGrid substation
Proposed power station site
GULGONG RD
Nanima House
Mount Nanima
GOBOLION ST
WELLINGTON TOWNSHIP
Bell River
Macquarie River
2116720A_2156_Extent_of_grid_In_Air_modelling.mxd GK August 6, 2008
Projection: GDA 94 MGA Zone 55
Extent of the grid used in the air modelling
Proposed pipeline route
Proposed power station site
Major roads
Minor roads
Major drainage
Minor drainage
Water body
Rail line
0
500
1,000 Metres

Appendix G

Wellington Council letter re: power station water supply, dated 9 September 2008

WELLINGTON
COUNCIL NSW Australia

Odj/at 19082008

RECEIVED
10 SEP 2008
BY:

9 September 2008

Mr Andy Pittlik
ERM Power
PO Box R1971
Royal Exchange NSW 2000

Dear Mr Pittlik

RE: SECURITY OF WATER SUPPLY TO PROPOSED POWER STATION ON GOOLMA ROAD

Wellington Council confirms that it can provide 20 Mgl/year of treated town water at a rate of 2500 litres/hour. Normally Council uses approximately 65% of its high security allocation.

Last year Wellington was put on restrictions by the State Government limiting Council to 70% of its allocation. This restriction was only for a limited period and highly unusual being the first time restrictions have been implemented since 1992.

Council's water treatment plant has a production capacity of 14 Mgl/day and the maximum demand on the plant is approximately 8 Mgl/day.

Please contact me on 02 6840 1718 if you have any further enquiries.

Yours faithfully

Owen Johns
DIRECTOR
TECHNICAL SERVICES

All Communications to be addressed to:
The General Manager
PO Box 62 WELLINGTON NSW 2820
Cnr Nanima Crescent & Warne Street
Email: mail@wellington.nsw.gov.au
Website: www.wellington.nsw.gov.au

YOUR COUNCIL ~ YOUR COMMUNITY

ABN: 57 268 387 231
Office Hours: 9.00am - 5.00pm
Cashier Hours: 9.30am - 4.00pm

TELEPHONE NUMBERS
Administration: (02) 6845 2099
Rates Department: (02) 68401711
Technical Services: (02) 68401729
Health, Building & Planning (02) 6840 1723
Facsimile: (02) 6845 3354

Appendix H

Goobang National Park *Gazette* notice

NATIONAL PARKS AND WILDLIFE ACT, 1974

PROCLAMATION

I, REAR ADMIRAL PETER ROSS SINCLAIR, A.C., Governor of the State of New South Wales, with the advice of the Executive Council and in pursuance of the powers vested in me under Section 33(2) of the National Parks and Wildlife Act, 1974, do by this my Proclamation, reserve such of the lands described hereunder as are prescribed lands within the meaning of Section 33(1) of the National Parks and Wildlife Act, 1974, as **Goobang National Park.**

Signed and sealed at Sydney, this 22nd day of December 1995.

P. R. SINCLAIR, Governor.

By His Excellency's Command

PAM ALLAN, M.P.,
Minister for the Environment.

GOD SAVE THE QUEEN!

Description

Land District - Parkes, Molong and Dubbo
LGA - Narromine, Parkes and Cabonne

Counties Ashburnham, Kennedy and Gordon, Parishes Biridoo, Caloma, Belmore, Hervey, Strathorn, Kadina, Hyandra, Houston, Rocky Ponds, Curumbenya, Benya, Wolabler, Bindogandri and Bumberry, about 32,700 hectares, being:-

1. lot 48 DP 42895, lot 59 DP 720566 (*Benya*), lot 163 DP 40617 (*Houston*); Trig Reserve 37380, Crown reserved roads within Portions 121 & 133 (*Bumberry*) and Portion 37 (*Biridoo*); the area bounded by Trunk Road No.61 (R1565-1603), Portions 38 & 198, end of road (*Bindogandri*), Portion 104 and Trunk Road No.61 aforesaid (*Bumberry*); the area bounded by Portions 35, 34, 25, 18, 22, 21 & 10 (*Curumbenya*) and Herveys Range State Forest; and the area bounded by Portion 82, 92 & 99 (*Wolabler*) and Curumbenya Nature Reserve;
2. the balance of Herveys Range State Forest No. 634 dedicated 5 July 1918, and Nos. 1 and 2 Extensions, dedicated 3 January 1936, and 8 December 1944, respectively; the balance of Wandawandong State Forest No. 761 and the balance of No. 2 Extension thereto dedicated 14 January 1921, and 12 January 1945, respectively, and Nos. 1, 3 and 4 Extensions thereto, dedicated 12 November 1937, 18 April 1952 and 18 April 1958; and Bumberry State Forest No. 891, dedicated 18 April 1947; exclusive of strip 40m wide embracing Main Road No.234 and strip 60m wide embracing Main Road No.233: NPWS/ M2669.