FINAL

Bayswater B Submissions Report
Macquarie Generation
27 November 2009
Document No

Bayswater B Submissions Report

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Prepared for

Macquarie Generation

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Part A – Background

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1.0 Introduction

1.1 Overview of proposed project

Bayswater B is a proposed 2000 MW power station in the Upper Hunter Valley. Macquarie Generation (MacGen) is the proponent for the Concept Approval stage of the proposed project. The Environmental Assessment (EA) prepared for Bayswater B has assessed both coal and gas fired options. The gas-fired option would be a Combined Cycle Gas Turbine (CCGT) plant consisting of five 400 MW units, whilst the coal-fired option would be an Ultra Supercritical (USC) plant consisting of two 1000 MW units. The proposed power station footprint would be located within the Singleton Local Government Area (LGA), while auxiliary infrastructure such as roads, conveyors and/or pipelines would be located within the Muswellbrook LGA.

1.2 Overview of EA approval process

A Preliminary Environmental Assessment Report and Planning Focus Meeting in June 2009 formed the basis for the Department of Planning (DoP) to issue Director General's Environmental Assessment Requirements (EARs) for the preparation of the EA for Bayswater B. An EA was prepared for Bayswater B in accordance with the EARs issued by the Director General.

The EA was placed on public exhibition from 25 September to 26 October 2009, as further detailed in **Section 2.2**. The submissions received during this period form the basis of this Submissions Report. Following this, DoP will undertake an assessment, followed by the Director General's report, and finally the Minister's determination.

1.3 Purpose of this report

The purpose of this report is to detail and provide responses to submissions by private individuals, community groups and government agencies regarding the proposed Bayswater B project which were received during the EA exhibition period.

1.4 Structure of this report

This Submissions Report is structured as follows:

- **Chapter 2** details the consultation process which occurred as part of the EA preparation and during the exhibition period.
- **Chapter 3** presents a summary of the submissions received regarding the proposal.
- **Chapters 4** to **9** provide responses to submissions by private individuals as they relate to chapters of the EA document, addressed issue by issue, while Chapter 10 provides responses to issues outside the scope of the EA.
- **Chapters 11** and **12** provide responses to submissions by State and Local Government agencies and representatives, while **Chapter 13** provides responses to submissions by non-government agencies, addressed group by group.

Chapter 14 presents the revised Statement of Commitments as a result of the submissions received.

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2.0 Consultation Process

Consultation with Local, State and Federal Government as well as community and stakeholder groups with regards to the proposed Project has occurred throughout June to November 2009.

2.1 Consultation during EA Preparation

As part of preparation of the EA, consultation occurred with Councils, the Aboriginal community, community groups and other relevant stakeholders. This is detailed in full in Chapter 7 of the EA.

2.1.1 Council and Community Consultation

Meetings were held with Muswellbrook and Singleton Shire Councils and community stakeholders during preparation of the EA in order to discuss the proposed project, determine what the key issues of concern were for each group, discuss which issues were appropriate to address as part of the EA and how these might be addressed. Meetings were held with:

- Muswellbrook Shire Council
- Singleton Shire Council
- Muswellbrook Council Environment Committee
- MacGen Community Consultative Committee
- Muswellbrook Shire Council Commerce, Industry and Tourism Committee
- Hunter Central Rivers Catchment Management Authority
- Hunter Business Chamber
- Landowners along the potential lateral gas pipeline route.

2.1.2 Issues Raised

The issues raised in these meetings are detailed in Chapter 7 of the Bayswater B Power Station EA but are largely related to:

- Socio-economic impacts on the local and surrounding communities, particularly with respect to cumulative impacts on roads and services during the construction period
- Air quality
- Health issues
- Greenhouse gas emissions
- Water requirements of the proposed power station.

2.1.3 Aboriginal Community Consultation

Aboriginal community consultation was undertaken in accordance with the DEC (now DECCW) (2004) *Interim Community Consultation Requirements for Applicants* (ICCRs). These guidelines outline a process of inviting Aboriginal groups to register their interest in being party to consultation (including local newspaper advertising), seeking responses on proposed assessment methodology, and seeking comment on proposed assessments and recommendations. The guidelines require proponents to allow ten working days for Aboriginal groups to respond to invitations to register, and then 21 days for registered Aboriginal parties to respond to a proposed assessment methodology.

Stage 1 – Notification and Registration of Interest

Specifically, consultation consisted of the following:

- advertisement of the project in the Hunter Valley local newspaper, inviting Aboriginal groups to register interest
- letters sent to organisations requesting advice on Aboriginal stakeholders to consult and known heritage issues to be taken into consideration
- contact with known Aboriginal organisations around the study area, as a result of advice received from those organisations.

Stage 2 – Briefing and Methodology Advice

Briefing letters were sent to the Aboriginal groups that initially registered their interest (Stage 1), advising the proposed methodology for the survey.

As a result of this process, and after the 21 day response period required by the ICCRs, specific Aboriginal community groups were registered as stakeholders in the project.

Stage 3 – Consultation

Letters were sent to the registered stakeholders inviting them to attend a presentation and workshop and visit to the project site and at the same time, requesting feedback on known cultural heritage issues for the study area.

A briefing was held on site on 9 September (details are provided in Section 12.1.5 of this report).

Consultation with the Aboriginal community has been ongoing throughout this project and all registered stakeholders have been invited to comment upon the draft Heritage Assessment report prior to its finalisation. Details of written and verbal consultation responses have been provided in **Section 11.2.5** and **Appendix C** of this report.

2.2 EA Exhibition

2.2.1 Internet / Public Notice

The Bayswater B Power Station EA was placed on exhibition by DoP between 25 September and 26 October 2009. Public Notices regarding the exhibition period and inviting submissions were advertised by DoP. The entire EA including all appendices and EARs was available on the DoP Major Projects website at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3327. Hard copies were also available for viewing at the DoP Sydney office, Singleton Shire and Muswellbrook Shire Councils.

2.2.2 Community Open Days

Community Open Days regarding the proposed project were held at Muswellbrook and Singleton Shire Council Chambers on 20 and 21 October 2009, respectively, from 12pm until 7pm each day. These sessions were advertised in local newspapers prior to the event. Additionally, the Open Days were discussed in a news piece on ABC Upper Hunter (Muswellbrook) radio, on 20 October 2009.

The Open Days involved the following:

- Multiple copies of the Bayswater B Power Station EA and appendices available for viewing and discussion.
- PowerPoint presentation describing the development and presenting summary discussion of key issues.
- A3 size map folders of all figures from the EA available for viewing and discussion.
- A2 size posters of key figures from the EA for closer inspection and discussion.
- Copies of the EA document on compact disc as well as print-outs of the Executive Summary of the document for interested parties to take away.
- Attendance by AECOM consultants and MacGen representatives to discuss points of interest and answer environmental and technical questions regarding the proposed project and the EA document.

At the Muswellbrook Open Day, seven individuals attended. Three of these were private individuals. Two representatives from Muswellbrook Shire Council attended – C. O'Brien and C. Fleming. Two representatives from MacGen attended – S. Ireland and T. Woolley.

At the Singleton Open Day, six individuals attended. Five of these were private individuals. Councillor Lyn MacBain attended in her capacity as a representative of Singleton Shire Council and also as a representative of the Singleton Shire Healthy Environment Group.

In addition to the Open Days, during the Bayswater B EA exhibition period (20 October 2009) the MacGen Community Consultative Committee (CCC) requested an additional meeting to discuss or reiterate key issues of concern. The CCC includes representatives from the local community, Councils and MacGen.

Key issues raised at the two open days and by the CCC are listed in **Table 1**.

Table 1: Issues Raised at Open Days and by CCC

Issue	Where Addressed
Strategic justification for project	EA – Chapter 2 This Report – Chapter 4
Air quality – modelling methodology, air inversion impacts on dispersion, fluoride impacts on vineyards and animals	EA – Chapter 9 This Report – Chapter 5
Health impacts / regional health study	This Report – Section 5.9
Carbon capture and storage (CCS)	EA – Chapter 10 This Report – Chapter 6
Water resourcing for the project	EA – Chapter 11 This Report – Chapter 7
Flora and fauna – offsets if required	EA – Chapter 15 This Report – Sections 11.2.6 and 11.7
Ash disposal from coal fired option – potential trace element impacts on animals, air quality (particulates), groundwater impacts	EA – Chapters 9, 13, 22 This Report – Chapters 5, 7, 8
Visual impact – height of stack; viewpoints used for visual analysis	EA – Chapter 19
Traffic impacts	EA – Chapter 21 This Report – Section 11.3.4, 11.5, Chapter 12
Cumulative effects of Bayswater B and other proposed projects on community and infrastructure	EA – Chapter 23 This Report – Chapter 5, Sections 11.7 and 11,8, Chapter 12
Exhibition and consultation process / time available	This Report – Section 10.4
Expression of support for the proposed power station as a source of future economic development and employment	N/A

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3.0 Summary of Submissions

3.1 Submissions Process

During the exhibition period, submissions regarding the proposed project were accepted by DoP from online, email and post sources. Submissions were numbered as received and provided to MacGen for a response. All submissions have now been reviewed and issues raised have been addressed in this Submissions Report.

3.2 Submissions Received

In total, 362 submissions were received with regard to the proposed Bayswater B Power Station EA (not including duplicates from the same respondent which were received by both email and post).

Of these, 328 were from private individuals, while 34 were from groups including State government agencies, local government (both within the Hunter Region and from other regions of NSW), NGOs and other organisations.

Table 2 below summarises the Chapters presented in the Bayswater B EA. The table also provides an indication if submissions were received with respect to that Chapter or subject. The ensuing sections of this report then deal with issues where submissions were received, in chapters as indicated in **Table 2**.

Table 2: Submissions on the EA

Chapter of the EA	Submissions Received
Introduction	No submissions received
Strategic Justification	Submissions received. Refer Chapter 4
Alternatives	Submissions received. Refer Chapter 4
Site and Context	No submissions received
Project Description	No submissions received
Statutory Planning	No submissions received
Consultation	No submissions received
Issues Prioritisation	No submissions received
Air Quality	Submissions received. Refer Chapter 5
Greenhouse Gas Emissions	Submissions received. Refer Chapter 6
Surface Water	Submissions received. Refer Chapter 7
Land Capability	Submission received from CMA. Refer Section 11.7.
Groundwater	Submissions received. Refer Chapter 8
Noise	Submissions received from DECCW. Refer Section 11.2.3
Flora and Fauna	Submissions received from DECCW and CMA. Refer Sections 11.2.6 and 11.7
EPBC Matters	Submission received from Greens MP John Kaye. Refer Section 11.8
Heritage	Submissions received from DECCW. Refer Section 11.2.5
Social and Economic Assessment	Submissions received. Refer Chapter 9
Visual Assessment	No submissions received
Hazard and Risk	Submissions received. Refer Sections 8.4 and 8.5. Multiple submissions were received on health which has been discussed in Section 5.9 of this report in conjunction with air quality.
Traffic and Transport	Submissions received from RTA and Councils. Refer Section 11.3.4, 11.5, Chapter 12

Chapter of the EA	Submissions Received
Waste	Submissions received with regards to ash waste from the coal fired option. Refer Chapter 8
Cumulative Impacts	Submissions received - discussed within subject specific chapters
Environmental Management	No submissions received
Statement of Commitments	Submissions received from Muswellbrook Council. Refer Section 12.1
Residual Risk Analysis	No submissions received
Project Justification	No submissions received
Conclusion	No submissions received

Part B – Response to Submissions from Private Individuals

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4.0 Strategic Justification and Alternatives

4.1 Introduction

This Section provides a discussion on two issues raised by private submissions:

- Replacement of fossil fuels with renewables; and
- The use of specific technologies trialled elsewhere.

4.2 Strategic Justification

A number of submissions commented that the need for additional baseload generation capacity has not been demonstrated and/or that measures such as energy efficiency measures, demand management and market response to rising electricity prices will reduce or eliminate the need for additional energy.

For a number of years TransGrid the authority responsible for producing annual forecasts of electricity consumption for NSW has indicated that there will be an electricity supply shortfall in the NSW region of the National Electricity Market (NEM) at some point during the next 4 to 10 years **(see Figure 1)**. TransGrid's and the Australian Electricity Market Operator's (AEMO) 2008 forecast demonstrated that insufficient energy supply is likely to occur from approximately 2016/17. The Owen Inquiry report noted the need for new baseload power on the basis of TransGrid projections, which are derived from a variety of factors and are revised in response to national and international factors. TransGrid's forecasts have also made allowances for the likely outcomes from demand side measures, energy efficiency initiatives and the impact of a CPRS. Refer to Chapter 2 of the EA and **Section 4.3** below for more detail.

4.3 Replacement of Fossil Fuels with Renewables

Many private submissions raised concerns regarding the proposal for a fossil fuel power station as opposed to the use of alternative technologies, particularly renewable energy technologies.

The Bayswater B EA outlined a range of alternatives and there were significant reasons for not choosing each of those. The principle selection criteria in relation to the choice of a technology were:

- The ability to meet baseload generator requirements
- The ability to be planned, approved by government, designed, constructed and operational within the next decade
- Financially affordable
- Lowest practicable emission technology
- Mature technology.

Many submissions identified the need to either replace the current proposal with renewables and/or replace existing fossil fuel power stations with renewables, either immediately or in the future.

Figure 2 shows the current and projected contribution of renewables by TransGrid in its 2009 forecast and the balance by fossil fuel facilities in NSW. As can be seen, with the removal of fossil fuel facilities, the shortfall in electricity supply to meet demand (shown in the red line on **Figure 2**) would be an unrealistic target. The policy framework developed by both Federal and State governments is focussed on mandating the increase in the deployment of renewables to contribute 20% of electricity supply in the National Electricity Market through the NRET legislation by 2020. It may be difficult for NSW to meet that target as, with the exception of solar energy, other states have better renewable resources. Briefly, wind and biomass are mature technologies that can be deployed now. In general, photovoltaic technology lacks large scale storage systems to enable supply during night time and periods of low incident solar radiation. Geothermal (hot rocks) is still at the early development stage. Solar thermal (power) technology is well suited to and is now being designed with energy storage features and is approaching mature technology status but is prohibitively expensive. Solar thermal (water heating) technology is mature technology and is making a contribution.

Within the NEM the most favourable locations for renewable technologies are

- Wind – Southern coast of South Australia, Victoria and Tasmania
- Biomass – Queensland based on the sugar industry
- Solar – Remote areas of Queensland, South Australia and NSW
- Geothermal – South Australia

4.3.1 Meeting the Supply Shortfall - Renewables

Figure 2 shows where electricity consumption is expected to overtake the electrical supply available to NSW (forecast to be in 2016/17). In reality, action has to be taken earlier to allow for electrical supply security (i.e. the available electrical supply should always be more than the consumption). The projected supply issue is discussed at length in each of TransGrid's Annual Planning Reports (APRs) as it is these projections which are used by AEMO (the regulator for the NEM) to identify the need for additional supply capacity in its annual Statement of Opportunities (SOO).

Claims are sometimes made that for the years immediately following the shortfall the increasing deficit in electricity supply appears to be relatively small and easily met by renewables.

This argument does not recognise a number of significant points:

a) The level of electricity consumption projected by TransGrid shown on **Figures 1 and 2** represents the medium case scenario. TransGrid also considers the likelihood of higher and lower electricity consumption growth rates because of the uncertainties associated with a forecasting process. In the event that a higher growth rate is realised the shortfall occurs earlier and the need for new baseload power plant is brought forward.

b) **Figures 1 and 2** consider the period from the present to 2017/18. If it is extended beyond this point the deficit in electricity supply continues to increase.

c) By the year 2016/17 the existing fossil fuel fired generators in NSW will be operating at all time historically high sustained production. Several of these plants are ageing such that continued operation at these levels presents an increasing risk to electricity supply reliability.

d) The implementation of an Emissions Trading Scheme would benefit Bayswater B such that it is likely to displace older coal fired generators and as result reduce GHG emissions intensity for NSW.

e) By say 2020 the oldest fossil fired plants in NSW will be approaching 50 years of age and their retirement may be expected by this time or in the years that follow.

In order to obtain enough "baseload" or even peaking support electricity generation plant to meet the increasing baseload generation demand into the future, or gradually displace the older and less efficient fossil fuel plants, it would require very large installations of renewable plant (because of the need for greater reserve margins) over a wide geographical area at an extremely high cost to society.

When all these factors are considered it is apparent that the deficiency in electricity supply following the shortfall is significant and beyond the scope of renewables to reliably supply at an affordable cost.

4.3.2 Renewable Technologies in NSW

Wind

Wind is a mature technology except for the fact that economic energy storage systems do not yet exist to cater for low to no wind periods. As such, it cannot yet be considered as a base load generator.

The NSW Wind Atlas is produced by the Sustainable Energy Development Authority (SEDA) and shows that the majority of NSW is not suitable for wind turbine facilities. A very small proportion of NSW has a wind speed of around 6.5 - 7 metres per second, and no areas are shown with wind speeds higher than that. In addition to this atlas, the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) has produced a Renewable Energy Atlas of Australia (2007) which shows that the higher wind areas lie within Tasmania, Victoria,

South Australia and Western Australia. NSW by comparison does not achieve adequate wind speed capacity on a large scale.

Notwithstanding this, wind farms are possible (generally on advantageous ridge lines) within NSW, with some in operation and others planned. However, there are significant drawbacks in seeking wind farms as a replacement for baseload generators at this time. Primarily this is because (as a general rule) wind as an energy source is not a constant. As a consequence, wind farms need to be far larger (incorporating many more turbines spread over a larger geographic area) than the capacity might suggest in order to provide a more constant electricity supply. The output generated annually for wind farms is typically about 30% of the theoretical annual output. For example, the Blayney Wind Farm in NSW has a rated capacity of 10 MW but produces about 30% of the theoretical maximum annual output, that is about 25,000 MWh, which is equivalent to the energy supplied by a 3.4 MW fossil fired plant operating at a high annual capacity factor. This is comparable with the Owen Inquiry estimate of 30% capacity factor for wind generators. Similarly, the new Capital Wind Farm near Lake George has an installed capacity of 140 MW but is projected to produce around 35% of its theoretical maximum annual output that is 430,000 MWh, which is equivalent to the output supplied by a 57 MW fossil fired plant at a very a high annual capacity factor. In comparison, the output for the proposed 2000 MW Bayswater B plant would be 92% of its theoretical maximum annual output, that is about 15,000,000 MWh.

Solar

With solar power, the DEWHA Daily Solar Exposure – Annual Average map (2008) shows that the areas of NSW with the best solar exposure lie within the far north west of the State. This creates similar problems as with wind energy. The solar facility would have to be of a sufficient size to generate enough reliable baseload power. **Section 4.3.2** below discusses a solar power station in Spain. Power generation using photovoltaic technology in urban areas will make a progressive daytime contribution but cannot be regarded as baseload generation.

In addition, as with wind, transmission losses over a long distance to major load centres would occur. For solar, this would be potentially a worse issue, since the far north west areas that represent the best solar areas, are more remote than wind appropriate areas.

See **Section 4.4** for more detailed information regarding solar technology

Summary

In Conclusion:

- Renewable energy, particularly for example wind, is possible within NSW but does not represent the best value return on renewable resources in Australia.
- This means that renewable facility opportunities, while possible, are more limited in NSW than other States and investors are more likely to locate their renewable projects in states that have the best renewable resources.
- Given the limitations in renewable energy source availability, the facilities themselves need to be larger and their outputs would not meet baseload generation requirements for the State.

The continuation of research and development into renewable energy sources is important and there are Federal and State policies to support this (e.g. MRET and NRET). This will be complemented by mandatory targets within the coming years for the reduction of greenhouse gas emissions and the resultant increase of green energy. This project aims to provide baseload power. It would not displace the need for, or the policy drive behind, further development of renewable sources (or demand management). This project is aimed to work in conjunction with the growth of renewables over the coming years as this project, representing newer and more efficient technology, could begin to displace older and less efficient facilities which currently continue to operate because of energy demand.

Demand management itself is also an important initiative that will continue to be pursued by government. It is expected that the proposed Carbon Pollution Reduction Scheme will provide a large focus for this. Again, this project will work within the context of the CPRS.

It should be noted that TransGrid already makes allowances in its energy growth projections for demand side measures and the CPRS.

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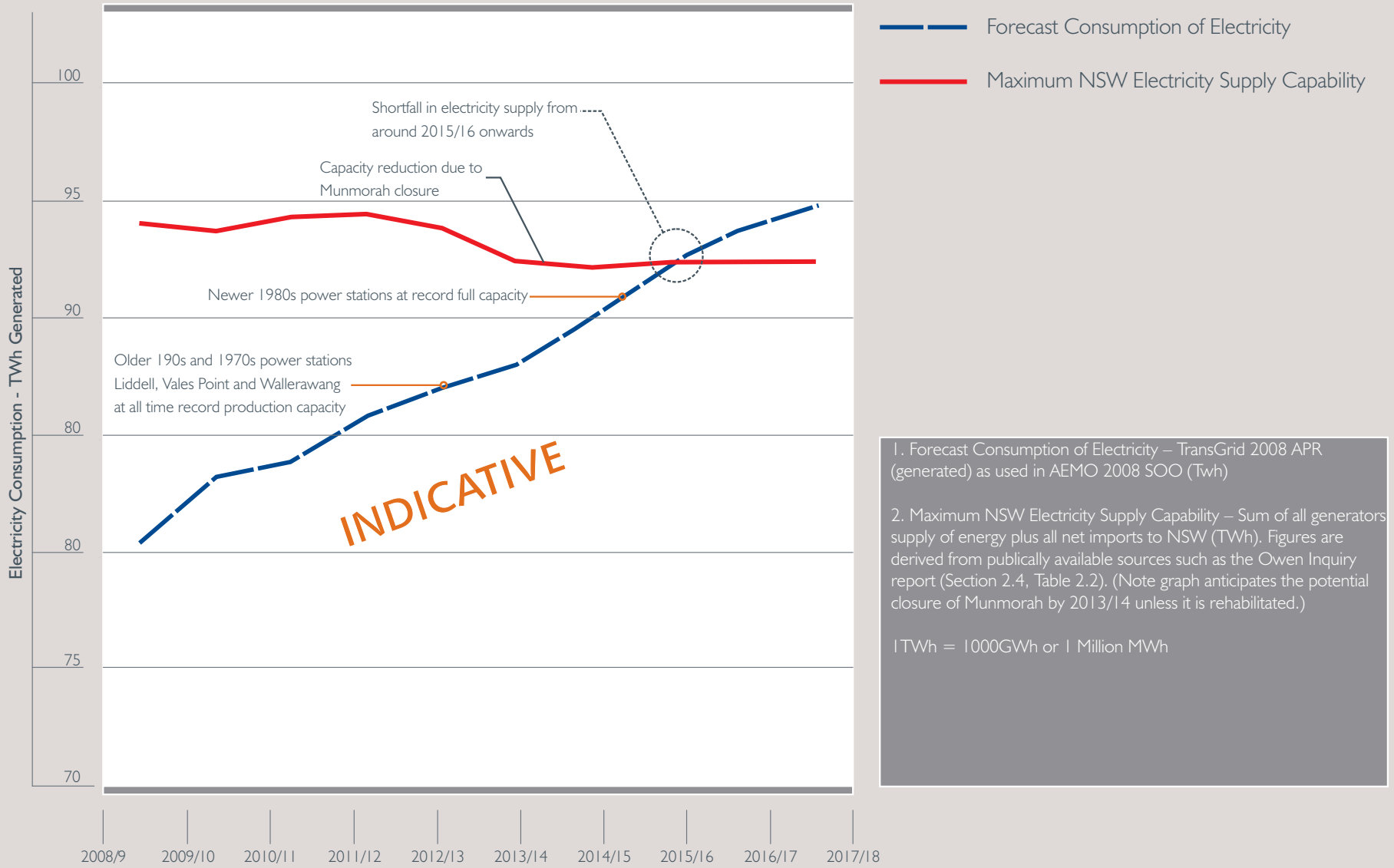

AECOM

Projected NSW Consumption and Supply of Electricity
Submissions Report for Bayswater B Power Station

Figure 1

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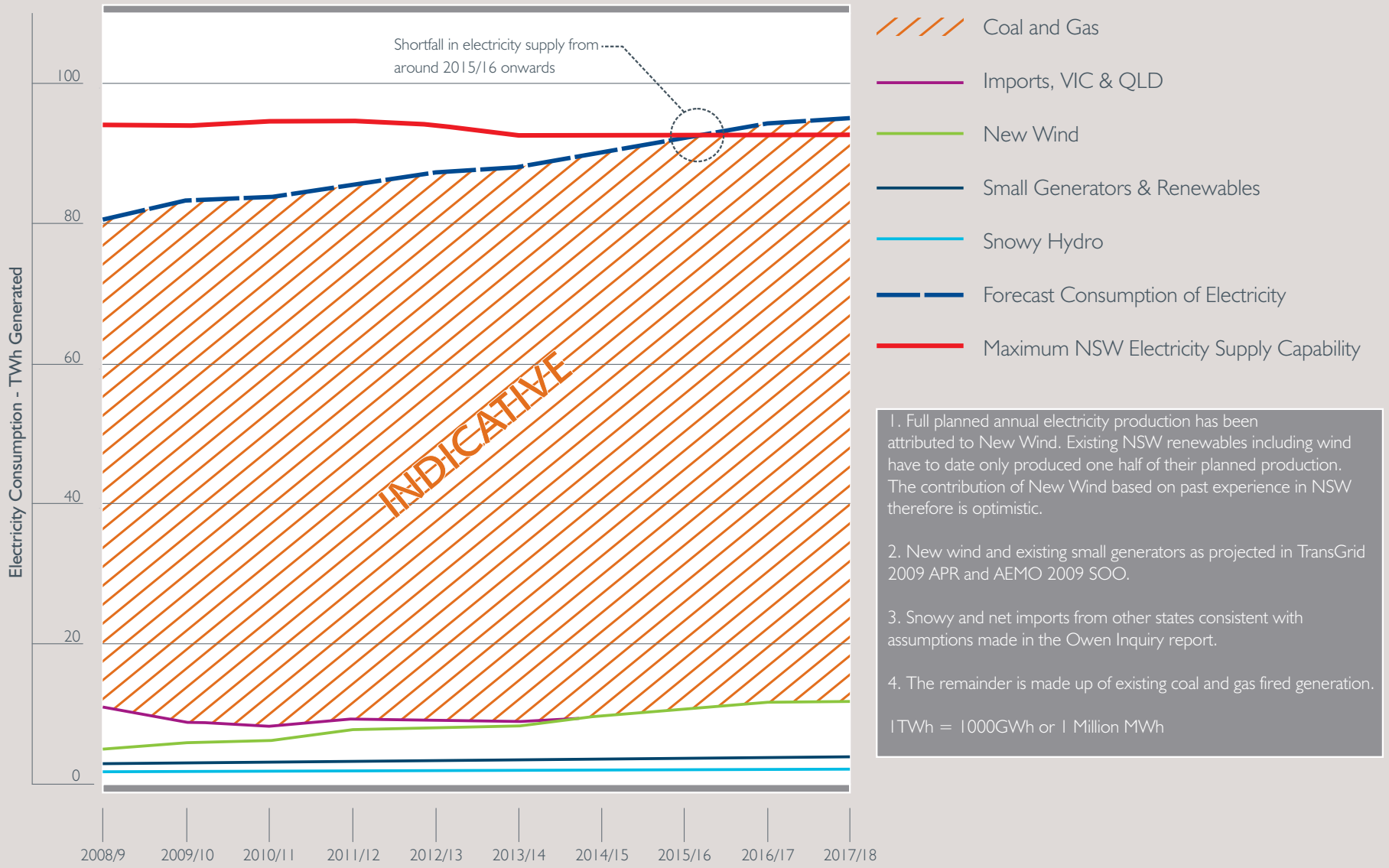

1. Full planned annual electricity production has been attributed to New Wind. Existing NSW renewables including wind have to date only produced one half of their planned production. The contribution of New Wind based on past experience in NSW therefore is optimistic.

2. New wind and existing small generators as projected in TransGrid 2009 APR and AEMO 2009 SOO.

3. Snowy and net imports from other states consistent with assumptions made in the Owen Inquiry report.

4. The remainder is made up of existing coal and gas fired generation.

1TWh = 1000GWh or 1 Million MWh

AECOM

Forecast NSW Consumotion of Electricity by Generation Source

Submissions Report for Bayswater B Power Station

Figure 2

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4.4 Specific Technologies Already Trialled for Bulk Electricity Generation

Several alternate technologies were suggested in private submissions, particularly solar thermal augmentation, a full scale solar thermal plant (as trialled in Spain) and biomass. These are discussed below in further detail.

4.4.1 Solar Thermal Augmentation

MacGen has contributed capital for a world first application of solar thermal technology at its Liddell Power Station to produce renewable energy. The Liddell Solar Thermal facility is experimental in nature and its commercial viability is not yet proven. Whilst valuable experience has been gained, the capital cost is very high for a limited return as the Hunter Valley sunlight conditions are marginal for solar energy purposes. MacGen supported by significant government (renewable energy) funding, is considering expanding the current plant to be able to better assess its solar thermal performance and assist with the industry development. This expanded plant is likely to cost in excess of $9 million and deliver less than 0.25% of the energy produced by one of Liddell's four existing generating units (500 MW each).

Solar augmentation is currently not commercially viable for Bayswater B. While the EA indicates shading is an issue, with the site being some 100 m lower than surrounding hills, other issues considered include:

- High capital cost. The capital cost of Liddell solar thermal augmentation would be at least five times more expensive than the main plant on an annual continuous output basis. This is in line with the high capital cost reported for new solar thermal plants being built (e.g. the Andasol plant in Spain). Economic feasibility is threatened by high capital expenditure and low capacity utilisation and therefore energy output more so than by other cost parameters.
- Insufficient data is available to properly project future operating and maintenance costs at this time.
- Solar Thermal plants require very large areas of land if they are to produce significant output. Available land area for augmentation is limited with Saltwater Creek and tributaries and existing vegetated areas quarantining much of the site, while sloping topography impacts other areas.

4.4.2 Solar Thermal Power Station

In July 2009 the 50 MW Andasol 1 Power Station entered service in Spain and became the largest solar thermal plant in Europe. A second 50 MW plant, Andasol 2, also became operational during 2009, while a third 50 MW plant, Andasol 3, is currently under construction. The solar reflectors at Andasol 1 cover an area of over 50 ha while the total surface area of the plant is approximately 200 ha. Tanks store surplus energy during the midday period using liquid salt. This stored heat enables the power station to operate at full power (50MW) for up to 7.5 hrs (in summer) after the sun has set. Annual electricity produced at Andasol 1 is 180,000 MWhr[1] (generated), equivalent to a 20 MW fossil fired plant operating at full output all year. This is compared to 15,000,000 MWh (sent out) p.a. from the 2000 MW Bayswater B. Even when all three Andasol plants are operating (with a combined rated capacity of 150 MW), the combined annual electricity output would be equivalent to the energy produced by a 60 MW fossil fired plant operating at full output all year.

Andasol 1 cuts annual emissions of CO_2 by up to 150,000 tonnes p.a. Its capital cost was approximately AUD$500M or AUD$10,000/kW (Bayswater B is expected to cost a maximum of $2000/kW if coal fired). Electricity prices received by the Andasol plant owners as a grant subsidy for 25 years vary between $400/MWh to almost $600/MWh. Typical pool prices in the NEM are around $40/MWh.

This type of plant is clearly an important step in the evolution of renewables. However, whilst the future prospects for solar thermal generation are undoubtedly promising, it is unlikely this technology could compete in the local market for the foreseeable future without heavy government subsidy. Commercial debt is unlikely to be available without a government debt repayment guarantee or similar security.

[1] Solar Millennium, 2008. *The parabolic trough power plants Andasol 1 to 3*.

4.4.3 Biomass

For Bayswater B, the conceptual design is based on the selection of proven, commercially available technologies and manufacturers' standard reference design power plants in order to minimise capital cost and plant performance risks. The inclusion of biomass co-firing would increase the capital costs of the plant. It would involve the use of non standard technology and undoubtedly degrade the value of plant suppliers' performance guarantees.

MacGen has been active in the utilisation of biomass firing to replace coal. The quantity of saw mill residue and vegetable oil co-fired at Bayswater and Liddell was less than 1% by mass due to limited supplies of biomass and plant performance issues. Furthermore biomass had to be sourced from distances up to 300 km incurring prohibitive transport costs. An additional concern is the use of diesel fuel consumed with associated GHG emissions for the transport of the biomass.

MacGen does not currently fire biomass at Bayswater and Liddell due to the impact the low energy fuel has on plant output and the high cost of transport and handling which makes it uneconomic.

The lack of available locally sourced biomass and its high cost make biomass co-firing not viable for Bayswater B. It is also understood that the future availability of sawmill waste is threatened as a result of the declining native timber hardwood industry. The specific energies of softwoods are significantly lower resulting in little if any useful heat release.

5.0 Air Quality

5.1 Introduction

Many submissions were received with respect to air quality, ranging from technical queries on the air quality assessment, to broader concerns for perceived gaps in the assessment and the perceived reduction of air quality in the locality and the region.

These are discussed below by subject matter.

5.2 General Impacts to Air Quality

Some submissions were received regarding general concerns that the project would result in a reduction in air quality in the area. The Air Quality Assessment was the most detailed technical assessment of the EA and was undertaken strictly in accordance with DECCW's approved methods and in consultation with DECCW to ensure that all methodological approaches and results were discussed and agreed. Note that this assessment incorporated projected full load emissions from the proposal together with existing ambient conditions which include emissions from existing facilities (Bayswater and Liddell) and emissions from other existing sources in the region.

This project will be governed by the conditions of Concept Approval. After the technology choice and detailed design, the Air Quality Assessment would be reviewed and updated and re-presented in a Project Application. The ultimate construction and operation of the project would be governed by the future Conditions of Project Approval and also an Environmental Protection License (EPL) issued under the *Protection of the Environment Operations Act 1997* (POEO Act).

The EPL conditions aim to be practical but set limits which are protective of human health and the environment, taking into account the project in question, as well as the surrounding environment, land uses and context of the project.

The results of the Air Quality Assessment will be taken into account by DoP and DECCW in formulating these license limits and conditions of approval.

5.3 Reduced Potential Impact from Renewables

Some submissions raised the point that renewables would result in lesser air quality impacts than the proposed coal or gas fired power station.

In principle this is a correct assertion. However, in looking to the technologies that could affordably provide the baseload power[2] needed within the timeframe required (i.e. within the next decade), renewable energy technologies were found to be unable to meet these above-mentioned criteria. This is discussed further in **Chapter 4** of this report in relation to Strategic Justification and Alternatives.

5.4 Assessment Gaps

Some submissions were received that raised concerns that there had been gaps in the air quality assessment, particularly in relation to the cumulative emissions of metalloids, fluorides, particulates (dust emissions) and acid deposition.

The assessment was undertaken in accordance with approved methods and was modelled taking the background levels of each of the emissions identified in the submissions into account (except acid deposition, refer below). As such, the resulting model represents the cumulative results of the existing background (which includes all current operations and facilities in the vicinity) plus the Bayswater B project.

[2] baseload is defined as plant which operates continuously at full or near full output 24 hours per day 365 days per year irrespective of the total system load

Table 3 below identifies where these matters are discussed in the Air Quality Assessment provided as Appendix D to the EA.

Table 3: Air Quality Assessment - Location of Content

Pollutant	Location in EA	Page Number
Metalloids	Appendix D	5,22-24,31,69,87-89,109
Fluorides (see also **Section 5.5** below)	Appendix D	4,10,28,29, 58-60, 69, 94-96, 103,106,108,168-172
Particulates	Appendix D	4,22,28,57, 67-69, 93-94, 99-102,106, 108-109,139,142,166,167,177,178

The Air Quality Assessment shows that the maximum ground-level concentrations of acid gases comply with the DECCW's air quality assessment criteria at the nearest residences.

The DECCW's Approved Methods do not contain assessment criteria for acid deposition (as opposed to acid gases), nor are there assessment approaches defined.

5.5 Fluoride Deposition (Coal Fired Option)

A submission stated that that the EA did not contain detail on fluoride in the Upper Hunter. This concern was re-iterated in other private submissions.

As described in the Katestone Environmental Air Quality Assessment (Appendix D of the EA) and Chapter 9 of the EA, fluoride impacts from the coal-fired option have been assessed. The methodology used in that assessment was conservative in nature and therefore tended to overestimate ground-level concentrations, as discussed below. Whilst exceedences are predicted for the 24-hour average impact assessment criterion, this is not anticipated to impact upon plant growth; the 30-day and 90-day averages are more relevant criteria. As such, the predicted 24-hour exceedences are not expected to result in adverse impacts. No exceedences are predicted for 7-day, 30-day or 90-day average impact assessment criterion for applicable vegetation types at assessed locations. Note that fluoride emissions are not applicable for the gas-fired option.

Dr David Doley of the University of Queensland was approached to independently review the Katestone Environmental report in relation to fluoride. Dr Doley is an Honorary Research Consultant in the Centre for Mined Land Rehabilitation, The University of Queensland, Brisbane, Australia. His professional qualifications are: Diploma of Forestry (Australian Forestry School, 1961), Master of Science (University of Western Australia, 1965), Doctor of Philosophy (University of Oxford, 1967), Fellow of the Institute of Foresters of Australia.

Over the past thirty-five years he has been involved in experimental research and field observations on the effects of atmospheric pollutants on plants, with particular reference to fluoride. Publications relating to fluoride effects on vegetation include a book, a major review, a description of quantitative visual assessment of injury to vegetation, eight other journal articles, 17 published conference papers and about 200 reports.

He has conducted surveys of vegetation condition for numerous entities in Australia and New Zealand including aluminium smelters; electric power generators; and fertiliser, brick and tile manufacturers. He has contributed to environmental impact statements and industrial land management plans and has been called numerous times as a technical expert in formal environmental hearings and court proceedings in both countries.

He contributed to the development of air quality goals for fluoride by the Australian and New Zealand Environment Council (ANZEC) (1990) and the review in 2000 of air quality guidelines for the Ministry for Environment in New Zealand.

In summary, with regard to the Bayswater B Air Quality Assessment, Dr Doley has advised that:

- The Air Quality Impact Assessment for the Proposed Bayswater B Power Station Project prepared by Katestone Pty Ltd evaluated the effects of fluoride on vegetation (specifically the Arrowfield vineyard) using procedures that are considered to be valid and reasonable.
- Background atmospheric fluoride concentrations to the north-west of the proposed power station appear to be about 0.15 ug/m^3 during the grapevine growing season.
- Predictions of ground level fluoride concentrations included a significant overestimate of the likely rate of fluoride emission from the power station. Adjustment for this overestimate brings ground level conditions below criterion concentrations at several but not all sensitive receptors.
- It has been assumed that fluoride is emitted from the power station stack at a concentration considerably greater than the actual concentrations recorded from operating stations of design equivalent to the proposed station, so it represents a conservative estimate for the purpose of modelling. The modelled contribution of Bayswater B to ambient fluoride concentrations predicted by the modelling has also been overestimated. As such it can be expected that there would be fewer actual exceedences than was modelled.
- Exceedence of the 24-hour air quality criterion at the Arrowfield vineyard is not considered to be problematic for grapevine functioning. The predicted maximum 90-day average fluoride concentration at this site is close to the air quality criterion of 0.25 ug/m^3 for sensitive land use. However, because of the conservative modelling, the actual exposure is likely to be less than the prediction and the maximum 90-day ambient fluoride concentration at Arrowfield should not reach 0.25 μg/m^3. This would achieve compliance with the air quality criterion. If the most likely rate of fluoride emission from the power station is used, the maximum 90-day ambient fluoride concentration should be about 0.2 ug/m^3. Predicted foliar fluoride concentrations in the Arrowfield vineyard at the end of the grapevine growing season (21 to 27 mg/kg) are well below the concentration (80 mg/kg) that is accepted as the threshold for adverse effects on the health of grapevines or on the yield or quality of fruit. As such, adverse impacts are not anticipated at Arrowfield.
- Ground level fluoride concentrations may exceed some of the criterion values for sensitive land use in portions of the Muswellbrook-Denman vineyard area but it is considered that these exceedences are not likely to result in a detectable reduction in grape yield or quality. The Roxburgh, Windmill and Callatooda vineyards and another near Denman township may be exposed to 90-day average ambient fluoride concentrations that exceed the criterion value of 0.25 ug/m^3. Estimates of possible grapevine foliar fluoride concentrations at the end of the fruiting season in February are up to 75 mg/kg in the Roxburgh vineyard, or 60 mg/kg if the most realistic rate of fluoride emission is adopted. These concentrations are less than the recognised threshold of 80 mg/kg for the occurrence of adverse effects on grape yield or quality. As such, adverse impacts are not anticipated at other vineyards.
- Fluoride accumulation in ungrazed pastures could result in concentrations that exceed ANZEC goals, but where management practices prevent the development of rank pasture growth, this should not occur. As such, adverse impacts are not anticipated for livestock (including horses).
- It is considered very unlikely that there would be material adverse effects of 90-day average ground level fluoride concentrations of 0.5 to 0.6 ug/m^3 on the condition of olive trees or the yield of olives.
- It is considered very unlikely that there would be material adverse effects of 90-day average ground level fluoride concentrations of 0.5 to 0.6 ug/m^3 on the activities of residents of the Roxburgh district.

Concerns were raised in submissions regarding potential adverse impacts on Pukara Olive Grove and Roxburgh vineyards and other receivers including horse studs, populations, agriculture in general, horticulture and other industries, including how are they impacted by fluoride.

The Pukara Olive Grove and Roxburgh Vineyard are understood to be located on Denman Road, approximately 10 km from Denman. The contour plots contained in the Air Quality Impact Assessment include the areas of the Pukara Olive Grove and the Roxburgh Vineyard. The information contained in the Air Quality Impact Assessment indicates that the proposal satisfactorily meets the DECCW's impact assessment criteria for human health and amenity.

Whilst the Air Quality Impact Assessment indicates that fluoride levels associated with power generation are important, adverse impacts on crops are not expected to occur for the following reasons:

- The Air Quality Assessment has assumed emissions of fluoride would be at the regulatory limit of 50 mg/m³. Monitoring of emissions from Bayswater and Liddell Power Stations shows that fluoride levels are less than 20% of the regulatory limit
- Ongoing monitoring of crops in the Hunter Valley has not shown any adverse impacts to the growth of crops resulting from power generation.

In relation to the risk of fluorosis in animals, reference to US EPA publication paper (EPA – 600/1 – 78 – 08) is useful. Horses can safely consume fluorides in dry matter (i.e. grass or forage) on a continuous basis in concentrations of up to 60 ppm. The Journal of Dairy Science (Vol.68, No.7, 1985) presents empirical evidence which demonstrates that grass exposed to a fluoride in air concentration of approximately 0.5 µg/m³ would absorb fluoride and stabilise at a content of around 30 – 40 ppm. Depending on rainfall, temperatures and other factors, this absorption rate may vary over short periods. Modelling of fluorides by Katestone (as presented in the Air Quality Assessment in the EA) indicates ground level concentrations at receptors of 0.5 µg/m³ or less for averaging periods of 30 days or greater. This modelling is conservative as actual emissions are expected to be lower than those used for modelling. It is therefore considered that fluoride deposition does not impose an unacceptable risk to horses or horse stud operators in the region. Fluoride effects on equine forage (pasture) and consequential effects on horses are below the US EPA recommended concentrations for breeding or lactating horses and are not therefore expected to result in adverse impacts on the equine industry.

5.6 Stack Height and Emissions

Some submissions identified concern with the stack height, the assessment of emissions based on the stack height and the apparent gap in data for emissions at the stack top (rather than as ground level concentrations).

A 300 m high stack for the coal fired option was proposed and five 55 m high stacks were proposed for the gas fired option. No other stack heights are proposed.

All airborne pollutants are emitted from a stack for the purpose of dilution in the atmosphere. For those pollutants that eventually reach the ground they are measured by ground level concentrations. This is the recognised method of analysis and has been established and regulated by DECCW for the purpose of understanding air quality impacts. The project is required to comply with the provisions of the *Protection of the Environment Operations (Clean Air) Act Regulation 2002* which sets limits on allowable ground level concentrations.

It was submitted that:

"Plumes change weather, a study of BOM weather maps over time indicates drought zones downwind of plumes; and wetter areas - yet further downwind - as particles seed the clouds".

We have no knowledge of stack plumes causing higher or lower rainfall areas and this was not required to be addressed in the Director General's EARs. Climate change as a specific result of downwind stack emissions cannot be substantiated at this time. The potential effects of climate change as a result of greenhouse gas emissions are discussed further in **Chapter 6** of this report.

5.7 Interregional Transport of Air Pollution

It was claimed that:

The Katestone Environmental Air Quality Assessment was unreliable in relation to interregional transport of air pollution.

The interregional transport of emissions of air pollutants from Bayswater B Power Station was conducted using the models and model configurations developed by CSIRO in 2002 (IRTAPS). The results of the IRTAPS study were published in a number of peer reviewed journals and submitted to the DECCW (then the EPA) for review.

CSIRO conducted the IRTAPS study to investigate the impact of the seven coal-fired power stations within and close to the Greater Metropolitan Region (GMR) on air quality (Nelson et al., 2002a). These existing power stations are owned by Delta Electricity, Eraring Energy and MacGen and are located in the Hunter Valley, Central Coast and Western Coalfields regions. From an initial 16 months of monitoring data covering the summer months of 1996-1997 and 1997-1998, IRTAPS identified a number of days in which inter-regional transport may have occurred. From all days identified, four case study periods were investigated in more detail: 20-22 January 1997; 6-8 February 1997; 25-27 October 1997; and 11-13 March 1998. For each of these periods synoptic conditions were analysed and model sensitivity to the biogenic emissions was conducted. Results are presented in Nelson et al. (2002a, 2002b). A subset of results is also presented in Malfroy (2002).

The inter-regional transport of emissions from Bayswater B was conducted by Katestone Environmental in conjunction with the CSIRO. The study provides a credible assessment of the potential for impact associated with the Bayswater B Power Station proposal and concludes that the proposal has no statistically significant contribution to GMR air quality.

5.8 TAPM Modelling

One submission questioned the TAPM modelling undertaken for the Air Quality Assessment presented in the EA. It was claimed that:

Local meteorological conditions were not accurately represented in the TAPM model. Air inversions are a significant feature of the Upper Hunter, particularly at night in winter, and were not adequately considered as part of the meteorological data used to model dispersion Inversions inhibit the dispersion of gases and dust tending to cause higher concentrations at ground level. Modelled inversion results and SO_2 predictions are unreliable because TAPM modelling was used instead of using data from weather stations in the area.

Therefore other results of the Air Quality Study modelling might be unreliable; modelled assumptions are not in reasonable agreement with other studies; there might be more exceedences and/or different pollutant concentrations than those modelled.

The dispersion modelling is inadequate and unreliable; the representative years chosen for the modelling do not taken into account the years of the largest number of exceedences – excluding these years makes the modelling not representative of the data set as a whole.

The selection of multiple periods to model ensured that all conditions experienced at the proposed Bayswater B site were considered in the assessment. This includes selection of average periods, odd periods and periods where abnormal events occur. The process by which the final three periods were selected for the assessment occurred in the following stages:

- Stage 1: Probability distribution frequency (PDF) analysis of the wind speed and wind direction for all periods within the data set provided (15 years).
- Stage 2: Regression analysis to compare the wind speed and wind direction observations for each period compared against the data set average.
- Stage 3: Comparison of the PDF and regression analysis results from each site in order to select the periods that show the best representation of average (or normal), odd (or non-normal) and peak conditions.
- Stage 4: Investigation into pollution concentrations for each of the selected periods compared against the analysis of the whole data set, ensuring that peak pollution events occur within the selected periods.

- Stage 5: Final selection resulted in five representative periods for potential use in the dispersion modelling assessment.
- Stage 6: Discussion with local personnel (MacGen staff) to ensure final periods selected did not include any unusual events such as excessive drought or bushfires and that the power stations were operating normally (i.e. power stations were not shut down for maintenance).

The TAPM meteorological modelling used for the impact assessment of Bayswater B Power Station was configured in accordance with DECCW's Approved Methods. TAPM is well recognised as an appropriate meteorological modelling approach. TAPM performed well in simulating local meteorological conditions. The model evaluation that was conducted demonstrated the model's good ability to represent air pollutant concentrations in the region and local area.

As is evident from the following excerpt from the TAPM Technical Description, TAPM does not utilise stability classifications of any kind in the calculation of dispersion. TAPM solves the primitive equations of geophysical fluid flow by calculating turbulence and diffusion internally and producing averages of these values as output.

"*...The meteorological component of TAPM is an incompressible, non-hydrostatic, primitive equation model with a terrain following vertical coordinate system for three-dimensional simulations of the atmosphere. TAPM solves the momentum equations for horizontal wind components, the incompressible continuity equation for vertical velocity, and scalar equations for potential virtual temperature and specific humidity of water vapour, cloud water/ice, rain water and snow. The turbulence terms in these equations are determined by solving equations for turbulence kinetic energy and eddy dissipation rate, and then using these values to represent vertical fluxes by using a gradient diffusion approach.*"

The vertical profile of the atmosphere is initially determined by the heating of the surface from solar radiation, the roughness of the surface and its ability to generate mechanical turbulence, the velocity of the wind, the horizontal and vertical advection of heat and turbulence from different land surfaces, the amount of vegetation, its leaf area index and rate of evapo-transpiration, to name a few of the variables. These variables are supplied to the model in up to date databases generated by the CSIRO and GeoSciences Australia. The model also uses synoptic data generated by the Bureau of Meteorology and the variables detailed above to solve the primitive equations of geophysical flow.

Inversions in the atmosphere are not merely relegated to the night. Inversions are present throughout the atmosphere and can persist at all levels and times of day. This is what is termed a 'stratified atmosphere' where layers of atmosphere are differentiated by changes in temperature. The difference in temperature between one layer and the next is known as the 'gradient'. The magnitude of this gradient is related to the magnitude of atmospheric stability (if the gradient is positive) or the magnitude of atmospheric instability (if the gradient is negative).

As such the generalised description of the atmosphere and its movements are prone to oversimplification in the attempt to relay information in a succinct and comprehendible manner. The stability of the atmosphere is calculated internally by the model at every calculation step (in the case of TAPM every 15 minutes of model time). This stability is not expressed in the model as a Pasquill-Gifford stability class, but a gradient in the atmosphere acted upon by the vertical and horizontal advection of heat, moisture and turbulence.

In an attempt to provide the general distribution of stability characteristics in the region a simplified method is adopted to provide Pasquill-Gifford stability classes. This information should be treated as purely indicative. The Pasquill-Gifford information is not used by the model in any way, but is calculated outside of the model's equations as a post-processing exercise. In the case of the Bayswater B Project, Katestone Environmental used the US EPA's recommended SRDT (solar radiation/deltaT) method, where solar radiation, wind speed and the temperature gradient between the surface and a level above the surface (here the next model level) are fitted to the Pasquill-Gifford stability categories.

Modelling data should be available on lead, mercury, dioxins and other air toxics. Assessment of lead impacts should be undertaken.

In-stack monitoring at commissioning should include Chromium VI or dioxins and furans. The proposed air quality monitoring program needs to be expanded and should encompass the existing power stations Bayswater and Liddell to enable assessment of cumulative pollution impacts.

An assessment of lead, mercury, dioxins and other air toxics has been provided. The information contained in the Air Quality Impact Assessment indicates that the proposal satisfactorily meets the DECCW's impact assessment criteria for human health and amenity.

Recommended requirements for in-stack monitoring of emissions from the Bayswater B Power Station were included in the air quality assessment. Bayswater and Liddell Power Stations are required to monitoring emissions of a range of air pollutants by DECCW. The monitoring requirements are specified in the licences for these facilities. Monitoring of emissions of dioxins and furans and hexavalent chromium has been conducted at Bayswater and Liddell Power Stations and emissions have been found to be very low.

5.9 Human Health

5.9.1 Health Impact Assessment and the Preliminary Hazard Analysis

Several private submissions identified human health in the Upper Hunter region as a key concern. It is noted that some raised human health as a concern specifically in relation to the Preliminary Hazard Analysis (PHA) presented in the EA. The PHA is undertaken in specific relation to a strict set of guidelines which relate to dangerous goods. It does not include human health impact assessment. The PHA relates specifically to *State Environmental Planning Policy No.33* (The Policy) *Hazardous and Offensive Development.* The PHA itself has been undertaken in accordance with DoP's approved methods.

As such, human health has been dealt with in the EA in relation to air quality which represents the primary potential pathway of concern raised in submissions.

5.9.2 Local Public Health

It is noted that health is a key concern of the local population and that several calls for a cumulative health impact study have been made. An assessment of human health was not a requirement of the Director-General as part of this EA but key attention was paid to air quality requirements (which would be the primary concern with respect to health).

Some baseline information is provided below to support this response to submissions and it is contended that the information, together with the Air Quality Assessment, indicates the project is located in an area which does not exhibit significantly different health statistics from other regions and the project meets the regulatory air quality criteria which aim to protect human health. A cumulative health impact study is not considered to be warranted for this project.

Table 4 below identifies relevant health statistics with respect to diseases that are normally associated with the pollutant profile of the proposed development. The Table compares statistics on population levels of asthma, cardiovascular and respiratory system diseases and cancer for the Hunter New England region with statistics for country New South Wales, and New South Wales and Australia. It should be noted that some information is for the Hunter urban region, where indicated.

Table 4: Relevant Health Statistics

Source	Region/Level	Category	Level %	Year/Publication
ABS	NSW	Asthma	9.1	2007-08 National Health Survey
ABS	NSW	Cancer	1.6	2007-08 National Health Survey
ABS	Australia	Asthma	9.9	2007-08 National Health Survey
ABS	Australia	Cancer	1.6	2007-08 National Health Survey
HNEH	Hunter New England region	Asthma	10.4	2003-04 NSW Health Surveys
HNEH	Hunter New England region – Singleton LGA	Cardiovascular disease	Reported as > state average	2005-2006 HOIST Centre for Epidemiology and Research
HNEH	Hunter New England region – Muswellbrook LGA	Cardiovascular disease	Reported as comparable to the state average	2005-2006 HOIST Centre for Epidemiology and Research

Source	Region/Level	Category	Level %	Year/Publication
HNEH	Hunter New England region	Cancer (new cases)	1% [a]	2005 HOIST Centre for Epidemiology and Research
AIHW	Hunter (Urban) Region [c]	Asthma	12.9 [d]	2005 Population Health Profile of the Hunter Urban Division of General Practice (using 2001 data)
AIHW	Country NSW	Asthma	12. 8 [d]	2005 Population Health Profile of the Hunter Urban Division of General Practice (using 2001 data)
AIHW	Hunter (Urban) Region [c]	Respiratory system diseases	31 [d]	2005 Population Health Profile of the Hunter Urban Division of General Practice (using 2001 data)
AIHW	Country NSW	Respiratory system diseases	31 [d]	2005 Population Health Profile of the Hunter Urban Division of General Practice (using 2001 data)

Notes:

ABS – Australian Bureau of Statistics

HNEH – Hunter New England Health

AIHW – Australian Institute of Health and Welfare

[a] Rate reported as 400/100,000 Females and 575/100,000 Males. Females and Males added together and divided by 100,000 for a % result.

[b] Rate reported as 150/100,000 Females and 250/100,000 Males. Females and Males added together and divided by 100,000 for a % result.

[c] the Hunter Urban Region does not include the Muswellbrook LGA and contains 6% of the Singleton LGA and therefore may not be representative of the community in proximity to the site

[d] rate reported as per 1,000 population, divided by 1000 for a % result.

The small variations observed in statistical incidence of disease does not necessarily rule out significant individual effects. However the data in **Table 4** indicates that:

- the levels of asthma disease identified for the Hunter urban region and Hunter New England region were not overtly higher than that for country New South Wales and Australia
- respiratory system disease incidence identified for the Hunter urban region was not overtly higher than that for country New South Wales
- the levels of cardiovascular disease identified for the Hunter New England (Singleton and Muswellbrook LGAs) region were broadly comparable with those for New South Wales
- the level of cancer cases identified for the Hunter New England (Singleton and Muswellbrook LGAs) region is broadly comparable with that for New South Wales.

In specific relation to the Bayswater B project, air emissions from coal and gas fired generation activities potentially include ash (coal fired option), particulate matter (in stack emissions, ash transport and vehicle emissions), and gaseous matter (stack emissions, vehicle). The air emissions are to be managed and/or engineered to be well within the criteria specified by DECCW.

Surface water/effluent emissions are well identified, managed, treated and stored within the existing water storage areas.

It is worthy of note here that a submission from NSW Health received for this project noted that:

"From the data provided in the EA it would appear that air quality would be mainly affected by dust emissions during the construction phase and ash disposal (for the coal-fired option). The proponent should consult with the Department of Environment, Climate Change and Water (DECCW) and processes should be in place so that the community can seek remedial action from the proponent in a timely fashion should air quality become problematic.

And in relation to surface water that *"It is noted that the EA indicates that the construction and operational phases of the proposed power station would not impact downstream off-site waterways, or result in down-stream water pollution or negative impacts on other water users."*

5.9.3 Public Health and Climate Change

Several submissions claimed the emission of CO_2 as a cause of thousands of deaths worldwide. This assertion appears to have been largely taken from a report from the Global Humanitarian Forum Geneva, Human Impact Report Climate Change (2009). This report assumes that 40% of the increase in weather-related disasters since 1980 are attributable to climate change and from there extrapolates a number of deaths as related to climate change. The report does note however that *"Recognizing that the real numbers may be significantly lower or higher than suggested by these estimates, they should be treated as indicative rather than definitive"* (2009, p7).

There is no doubt that a large proportion of the world is vulnerable to climatic, natural, social and political changes. The Federal government has made commitments to joining global efforts in this regard by ratifying the Kyoto Protocol and with efforts to establish Federal legislation and policy in the near future. These Federal initiatives and commitments are adopted at the State level (for example the Federal Mandatory Renewable Energy Target or MRET being adopted as State policy in the NSW Renewable Energy Target or NRET).

The State policies and initiatives are reflected in the requirements of DoP and DECCW particularly in the assessment of this project. This places the project within the broader context of Australia's national approach to pollutant emissions and the regulation of operations to be protective of human and environmental health.

A further discussion of the policy context of this project in relation to renewables and the need for the reduction of emissions is provided in **Section 10.1**. However, it is worthy of note here that this project is being reviewed by the State government within the context of Australian State and Federal mandates and requirements which have been formulated on the basis of Australia's place within the global effort on climate change.

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6.0 Greenhouse Gas Emissions

6.1 Introduction

Submissions were received on the issue of greenhouse gas (GHG) emissions. Many followed similar themes, and were largely related to concerns that Bayswater B would result in a significant increase in GHG emissions with a direct link to the exacerbation of climate change.

The context within which Australia operates is one of increasing growth based on a strong population and economic outlook. The Energy Information Association (EIA) produced the International Energy Outlook 2009. The EIA is a US agency, created by the US Congress in 1977. Its role is to provide policy-neutral forecasts and analyses and unbiased data. The 2009 Outlook prepared by the EIA identifies that world energy consumption is predicted to increase by 44% from 2006 to 2030. The vast majority of this energy consumption increase is attributed to non-OECD countries which are predicted to increase consumption by 73%, whereas in OECD countries, consumption is predicted to increase by 15%. The consumption growth in non-OECD countries is driven by the strong long-term GDP growth of the emerging economies (4.9% p.a. GDP growth on average compared to 2.2% for OECD countries)..

The EIA notes that in the absence of national policies and legislation regulating GHG emissions, world coal consumption is projected to increase by 1.7% per year. Non-OECD Asian region countries account for 90% of this total world increase. The EIA also notes that natural gas consumption is expected to increase by 47% from 2006 to 2030.

The EIA predicts that world CO_2 emissions will rise by nearly 40% between 2006 and 2030 – the bulk of the increase is also expected to occur as a result of non-OECD activities which would be in line with the predicted growth noted above. As a comparison it notes that in 2006, non-OECD emissions exceeded OECD emissions by 14% but by 2030, the non-OECD emissions are forecast to exceed OECD emissions by 77%.

Over the period of 2006-2030, the CO_2 emissions from OECD countries is predicted to remain relatively stable.

This information serves to show that the increase in energy demand is driven by economic growth, largely within the emerging markets of the non-OECD countries, while the OECD countries represent a generally incremental rise based on economic and population growth. The EIA, in its country report of 2004 identified that:

"In 2002, Australia accounted for 1.7% of the world's total energy-related carbon emissions. Although coal constitutes a major part of Australia's energy mix, increasing urban air pollution levels are more a consequence of automobile usage than coal consumption." (http://www.eia.doe.gov/cabs/australia.html)

This information has been provided to give context to the single biggest issue raised by submissions for this project.

World-wide, the control of fossil fuel use and the regulation of GHG emissions, is undoubtedly a key issue and this is evidenced in global initiatives to which Australia is a signatory and participant. The control of GHG emissions is of enormous environmental and social significance within the Australian and NSW context. The incremental growth experienced by Australia, rather than the rapid step change being experienced by the emerging markets of the non-OECD countries is driven by gradual population and economic growth. This incremental growth needs to be serviced by appropriate infrastructure (as outlined in the NSW State Plan) but also needs to be balanced with the appropriate control and regulation of GHG emissions.

A key factor in the projections set out by the EIA is predicted increase in the absence of national policies and legislation to regulate GHG emissions. Australia has policies at both national and State levels and will soon have a legislative framework that together are specifically designed to reduce emissions over time.

Section 10.1 of this report discusses the policy and legislative context for this project in further detail. The sections below provide information relating to specific issues and concerns raised by submitters. It should however be reviewed in the context of **Section 10.1** and the legislative framework surrounding the project that will regulate the operation of the power station.

6.2 Increase in Greenhouse Gas Emissions

Many submissions were received objecting to the project on the grounds that there would be a large increase (some submissions cited up to 30%) in greenhouse gas (GHG) emissions. This raises two key issues – whether the two proposed power stations of Bayswater B and Mount Piper would be constructed and operated concurrently, and whether the construction of one power station would represent an immediate step change in greenhouse gas emissions.

6.2.1 Concurrent Operation of Two Power Stations

The Concept Plan application lodged by MacGen was for Bayswater B power station only. Whether other approvals are issued or other projects are undertaken is not something that can be controlled by MacGen. As such it is more appropriate to assess potential impacts of Bayswater B and Mt Piper separately. Under its Electricity Reform Program the NSW Government plans to offer a number of sites for sale to the private sector. It could reasonably be expected that successful bidders would commit to the development of a large baseload power plant at any site only on the basis of project viability and unless demand and economics warrant it, the development of one site may see the development of the other sites delayed.

6.2.2 NSW GHG Emissions Benchmarking

As required by DECCW, the EA included benchmarking the project against national GHG emissions figures. MacGen's calculation of fugitive CO_2 emissions (operation phase) for both gas and coal fuels has been amended and increased from that quoted in Section 10.2.4 of the EA, but by amounts which do not materially alter the total levels of operational GHG emissions. The revised figures are 360,000 t CO_2-e p.a. for gas sourced from Queensland and 630,000 t CO_2 -e p.a. for coal mine fugitives (see Tables 10-4 and 10-5 in the Bayswater B EA)

The total anticipated greenhouse gas emissions from Bayswater B would be 12.78 million t CO_2-e p.a. for the coal-fired option, or 6.13 million t CO_2-e p.a. for the gas-fired option. This means that for Bayswater B, the anticipated addition to national GHG emissions was 2.08% and 0.99% (if coal-fired or gas-fired respectively) to annual National GHG emissions.

According to a report by DECCW (2009), NSW emissions in 2005 (the latest year of data) were 158.25 million t CO_2-e p.a. As such, based on 2005 levels, Bayswater B would increase NSW emissions by up to 7.9% for the coal-fired option, or 3.7% for the gas-fired option.

These numbers represent the total contribution from Bayswater B however, and dos not take into account incremental energy provision as demand increases, as discussed below, or the rise in NSW emission levels between the 2005 figures and the date at which Bayswater B would come on line if built.

6.2.3 Progressive Increase in Electricity Consumption

Chapter 2 of the EA outlines the strategic justification for the project and demonstrates that within the next decade a point will be reached at which there is a shortfall in the capacity of generating plant able to provide baseload generation of electricity. The submissions received identify a concern about an immediate and large scale increase in GHG emissions.

It is important to note that as the Bayswater B project is brought on-line, the full theoretical output of electrical energy would not be produced immediately because all generating units of a new plant are not commissioned at the same time. Units could be placed in service up to 12 months apart. In the case of the gas fired option the larger number of smaller units could result in a commissioning period of up to 2 years.

Figure 1 illustrates the TransGrid 2008 forecast of energy required by the market. The commencement of operation of a new baseload power generator does not of itself cause an increase in energy consumption in the market. The market remains on its incremental trajectory (which predominantly reflects population and economic growth) but with Bayswater B's energy production potential available to meet changing market requirements as they occur.

As Bayswater B achieves full energy production output, the improved thermal efficiencies offered by both the gas and coal fired options compared to those inherent in most existing plants operating in NSW at the present (which will be substantially unchanged by the time of the projected shortfall), means that the GHG intensity of electricity generated in the NSW is reduced. However, the total emissions are expected to increase.

Energy generated by Bayswater B would gradually partially displace the outputs of older and less efficient plants which in order to defer the time of the shortfall will have risen to levels of output not achieved before in their lifetimes. Continued operation of these older plants under such conditions presents heightened risks to system reliability. Displacement of less efficiently produced energy from older plants by energy from newer plants operating at better thermal efficiencies is an outcome consistent with the expectations of the state and federal governments and their GHG and climate change abatement initiatives, policies and intended legislative framework. Government initiatives such as the GHG Abatement Scheme and the proposed CPRS will encourage the displacement of older fossil plants with newer plants, due to improved efficiency and lower emissions, which in turn would result in reduced carbon costs.

As noted in **Section 10.1** of this report, renewables are also expected to progressively displace the outputs of older less efficient fossil fuelled facilities, although the slower rate of construction to date of renewables than had been expected suggests that the rate of displacement is difficult to predict. Government policies such as MRET and NRET mandate the mechanism for retailers to increase the percentage of renewables within their portfolios. In turn, fossil fuel plants will progressively be displaced by renewable plants when available, due to these mandated targets. This gradual displacement of outputs of ageing plants by improved efficiency facilities (such as Bayswater B) as well as the planned increase in renewables means that subject to the rate of growth of energy required by the market, GHG intensities are expected to fall and total GHG emissions from the electricity generating sector may reduce after an initial rise.

6.3 Greenhouse Gas and Climate Change

The bulk of submissions raise the concern that the increased GHG levels will contribute to global climate change. The direct link between the GHG emissions emitted by the Bayswater B power station and its contribution to climate change is difficult to determine and impossible to quantify. However, since climate change itself cannot be measured on a project basis, the potential source (i.e. GHG emissions) becomes the measurable component that can be controlled and regulated. The NGA and NGERs provide a framework for DECCW to assess the operational emissions of facilities in NSW which demonstrates whether those emissions are deemed to be significant. The conditions of any approval and subsequent Environmental Protection License conditions also then provide an ongoing basis for DECCW to regulate emissions from operational facilities.

This will subsequently continue to operate within the framework of a CPRS which will embody a national approach to the regulation of GHG emissions. The CPRS legislation is specifically targeted at managing contributions to climate change and this project will operate under that system.

6.4 Application of Carbon Capture and Storage Immediately

There is uncertainty in both the timing and cost of carbon capture and storage (CCS). Given the considerable global effort to develop this technology MacGen expects that a deployable technology will emerge.

The construction of the Bayswater B Power Station with immediate implementation of CCS technology is not feasible. As noted in the EA, CCS technology is not yet ready to be implemented at that scale and, if it were, there are currently difficulties in engineering the transport and storage of the carbon.

Retrofitting of CCS was required to be addressed under the Director General's Environmental Assessment Requirements and was discussed in the EA which identifies the current non-viability and non-practicality of applying CCS immediately. Bayswater B will be designed to accommodate CCS retrofitting. Triggers have also been identified in the EA (Section 10.4.3) which are designed to make sure that the application of a CCS technology takes place at the earliest appropriate opportunity.

Refer also to **Section 11.2.2** for further detail in response to DECCW's recommendations.

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7.0 Surface Water

7.1 Introduction

Submissions received with respect to Surface Water covered a range of issues including sourcing of water for wet and dry cooling to the impact of water sourcing on local communities. Each topic is discussed below.

7.2 Location of the Project

A submission was received that requested the re-location of the project to a river system where wet cooling was more feasible. Apart from the proposed location meeting identified selection criteria as discussed below, securing sufficient water for a wet cooled power station from another river system was considered non feasible because:

- Few rivers in NSW would have sufficient available water for wet cooling at the present time
- Those that may do are not sufficiently close to fuel sources or major load centres.

As described in Section 3.2 of the EA, the proposed location has been selected due to the following reasons:

- The site is on MacGen owned land
- It lies within the Bayswater-Liddell power generation complex and so provides opportunities to utilise existing infrastructure and water entitlements
- If a coal fired technology becomes the preferred approach, it lies within an area convenient for coal sources and transport
- If gas fired technology becomes the preferred approach, it lies within easy reach of the approved QHGP which will pass the site to the north east
- Being within the Bayswater-Liddell power generation complex, the site is consistent with the primary uses of this area and avoids the need to introduce a large generation facility to a new area
- The site is well located away from sensitive receptors, including environmental areas and community areas/residents
- The topography of the site assists in screening the proposed facility from long distance view points
- The site affords ready access from the New England Highway, avoiding the need for road upgrades or additional traffic on rural road networks.

7.3 Inclusion of a Full Water Balance

It was suggested within submissions that a full water balance should have been included as part of the EA. The preparation of the EA has been informed by a detailed Water Management Plan prepared by WorleyParsons as part of their concept design and feasibility assessment for this project. All water balance volumes and flow pathways determined as part of that Plan have been included within the EA in Section 11.2 and Figure 11.1. These included water use and wastewater volumes along with water disposal details, as required by the EARs. Further information will be prepared at the detailed design phase of the project.

Surface and groundwater management for the proposed project has been described in Chapters 11 and 13 of the EA to the extent possible at this Concept Stage. As described in Chapter 24 of the EA, if approved the construction and operation of Bayswater B would be subject to detailed management plans including Soil and Water Management Plans and (for the coal fired option) an Ash Disposal Plan which would include surface water and groundwater management measures.

7.4 Hunter River Water Sharing Plan and Drought Contingency

It was stated that:

It is of concern that if the Minister rejects the Bayswater B dry cooling option because of GHG issues, then there is insufficient water available for wet cooling. Securing additional water from the marketplace should not compromise the integrity of the Hunter River Water Sharing Plan.

The project comprises dry cooling and there is sufficient water available within existing allocations for the proposal without compromising the integrity of the Hunter River Water Sharing Plan. No other option is proposed as part of this Concept Approval.

In addition, it was claimed that:

The proposed power station is not 'drought-proof' as there are potential issues with some of the possible water security measures. For example, there is no present provision which allows conversion of general or high security entitlements to Major Utility Water. Assurances must be offered that any conversion is done according to regulations and that conversions are done to a ratio of 3:1 for General Security: High Security. It is of concern that there might not be sufficient water available and that other water users might be affected by the water use of the proposed development. Further drought contingency planning should be done now.

As required by the EARs, the EA has demonstrated the availability of viable water sources for the project (the 4.64 GL committed by MacGen). As such, other water users will not be affected. As detailed in Section 11.2.10 of the EA, drought contingency planning along with modelling of long term water availability would be undertaken at a later stage of project planning for Bayswater B, rather than at the current concept stage. It is considered that this would be more appropriate at that later stage, as the fuel option would have been selected and power station operational processes further defined, allowing a more precise determination of water requirements.

MacGen is a State Owned Corporation that abides by the applicable regulations, as such any changes to water entitlements would be done in accordance with all relevant regulations. Under the current Water Sharing Plan there is no provision to upgrade water entitlements to Major Utility Water.

In the event that following additional hydrological studies, the committed water supply is not adequate to meet the water requirements of Bayswater B, additional water rights would be sought via the water market (comprising willing sellers and buyers) or by other means such as tertiary treated water. This would ensure that other water users under the Water Sharing Plan would not be adversely affected.

There is no area on the Bayswater B site large enough for development of additional on-site water storage for use by Bayswater B if required. The footprint of the site should be enlarged to enable on-site water storage.

No new storages are proposed. A small augmentation of Plashett Dam may be necessary and would depend on the outcome of further studies.

The security of water storage capacity and fresh water supply for the proposed power station is of concern, given that water would be stored in MacGen water storages and piped from these storages to Bayswater B, which is proposed to be owned by a party other than MacGen. This water storage and delivery would be in accordance with a commercial agreement – what are the impacts on water supply if this agreement breaks down?

Water storage and delivery would be the subject of a legally enforceable long-term commercial agreement between MacGen and the Proponent. It would be in the interests of both MacGen and the Proponent to ensure that this agreement would not break down.

8.0 Groundwater and Waste (Ash Disposal)

8.1 Introduction

Some submissions were concerned with two aspects of fly ash disposal – the potential for dust generation and the potential for contamination of groundwater. These are considered below.

8.2 Further Detail on Ash Disposal Required

As discussed in Section 13.3.4 of the EA, the physical and chemical properties of ash are dependent on the coal's geological origin, combustion conditions, efficiency of particulate removal. This information cannot be defined accurately for Bayswater B until the detailed design phase of the project. Additionally, the location for ash disposal is not yet known, as this would be the subject of a commercial agreement at a later date, if the project is approved and if the coal-fired option is selected.

At this time neither the final specific properties of the ash nor the specific hydrogeological characteristics of the ash disposal site can be identified. Therefore potential impacts to groundwater and recommended management measures cannot be fully assessed as yet. At the detailed design phase, if the coal-fired option is selected and when the above information is known, a detailed groundwater assessment would be undertaken and an Ash Disposal Plan would be prepared. This would be undertaken prior to any construction commencing.

It was stated that:

DECCW's assessment requirements included "the EA should provide detailed information on the manner and disposal of ash". Since the mine void is not named, the impacts of the use of a void on the regulatory requirements for the mine in question, as request by DECC, cannot be assessed. Nor can the strategies to prevent ground water and surface water contamination from the disposed ash be assessed as they are not site specific.

During consultation with DECCW and DoP prior to the issuance of EARs and during preparation of the EA, it was discussed that as detailed above, final details of ash characteristics and management could not be defined during the Concept Stage of the proposal. All information available at this point in time regarding ash disposal was provided in Sections 13.3.4 and 22.6.5 of the EA. More detailed information would be provided as part of the Project Approval stage, if the coal-fired option is selected, and would form the basis of the Ash Disposal Plan for the project.

It was further claimed that:

The impact assessment and management measure will need to be site specific. The mine void must be specified so that a comprehensive and reliable scientific assessment of its suitability can be assessed. This must contain full geology and hydrology of the selected void(s). Permeability testing needs to be done and geological maps supplied.

As discussed, the location for ash disposal is not yet known, as this would be the subject of a commercial agreement at a later date, if the project is approved and if the coal-fired option is selected. At the detailed design phase, if the coal-fired option is selected and once the disposal site is identified, detailed site-specific impact assessment and management planning would be undertaken including assessment of geology, hydrogeology and permeability.

It was stated that:

No volumetric details are offered as to the size of local mine voids. This is necessary since it is proposed to cover the ash on a daily basis with soil. The volume of soil needs to be estimated since that will take up vital space and decrease the necessary void space for the fly ash. This void space needs to be verified.

As part of the selection of the ash disposal site during the detailed design phase, the capacity of the mine void/s under consideration would be assessed and the space required for ash disposal verified. This would take into account estimated volumes of cover material which may be spread over emplaced ash as each section is completed. Note that cover would be placed over ash when finished with a particular section or layer of emplacement. It is not anticipated that a large quantity of soil would be required, and it is most likely that the cover used would comprise or include the stockpiled overburden from the previous mining activity. The estimated requirement for a 25 million m^3 mine void noted in the EA would include space required for both ash and cover layers.

It was claimed that:

Storage of ash in mine voids is problematic since the voids are likely to be below the water table and since the geology of the area is accompanied by a number of faults, fractures and dykes. The voids therefore are not secure. Ash leaches toxic contaminants such as heavy metals which would then have a more immediate access to the water table.

At the detailed design stage of the proposed project, the following would be assessed in detail:

- Geology, hydrogeology and permeability of the mine void selected for ash disposal
- Physical and chemical composition of the ash including potential leachability
- Potential impacts of ash disposal on local groundwater quality.

These assessments would inform the development of detailed requirements for ash disposal and management to minimise or avoid potential impacts on groundwater in accordance with regulatory requirements.

It was further argued that:

Before any disposal option using mine voids is considered a full independent environmental audit of Ravensworth's ash emplacement should be undertaken for its general success and adequacy with regard to ash transport/conveying, migration of fly ash contaminants off site, groundwater contamination, and rehabilitation and land use post closure.

Ash disposal at Ravensworth is not within the scope of the Bayswater B project. However, as part of the detailed impact assessment for ash disposal from Bayswater B, the appropriateness of ash management measures in order to mitigate impacts on the environment, including groundwater, would be assessed.

8.3 Feasibility of Ash Disposal Location

During the detailed design phase and as part of the development of an ash management strategy, DII would be consulted and the geology and hydrogeology of the selected mine void would be assessed in detail with regards to impacts of ash disposal.

It was queried:

What mine voids would be capable of consideration? What if there are none?

Preliminary assessment indicates that various mine voids within a 10 km radius of the proposed power station would be available and appropriate for ash disposal. This would be further assessed at the detailed design stage.

It was argued that:

The void is to be within 10 km from the site. This seems a very long distance for a conveyor system carrying potentially very dangerous material. A mine void further than the proposed 10 km radius should not be contemplated.

10 km from the power station site has been proposed as the maximum distance for ash transport to a disposal site.

Ash from coal combustion is a waste material which is not deemed to be toxic nor hazardous. It is likely be classified as 'General Solid Waste (Non-Putrescible)' under the DECCW Waste Classification Guidelines (July 2009). In the detailed design and Project Approval phase the specific physical and chemical properties of ash and management measures would be determined in compliance with all relevant regulatory requirements.

8.4 Ash Disposal Management

It was claimed that:

Management measures in the EA regarding ash are acknowledgement of the dangers that fly ash poses to groundwater. To provide adequate protection to the environment and human health the mine void should be fully lined with a secure, impermeable liner. The proponent has understated the danger of groundwater contamination. The fly ash disposal methods proposed do not ensure that leachate migration into underlying soils and groundwater is prevented.

Management measures outlined for ash are in response to the following:

- Fly ash (in its untreated form) is a dust and therefore to improve manageability, ash requires conditioning with water to a slightly damp state.
- To prevent sedimentation of water flows, drainage management is a primary water management measure.
- To minimise potential impacts on groundwater, it is appropriate to minimise drainage into the mine void.

As discussed above, the characteristics of the ash and mine void along with potential groundwater impacts would be assessed in detail if and when the coal-fired option was selected. Detailed management measures would be developed in response to this assessment at that time.

The placement of conditioned fly ash in disused mine voids has the benefit of contributing to the reduction of spontaneous combustion as well as the rehabilitation of the voids.

It was further argued that:

An alternative solution is for the power station to build a purpose built and site specific ash emplacement facility, properly engineered. However the footprint of the proposal has not allowed the space for such a facility. This is a very serious issue and constraint.

If the coal fired option is selected, ash storage will be required. No suitable storage sites are available immediately adjacent to the proposed power station site. A purpose built facility is not considered to be a practical or feasible solution at this point in time. Given the volume of storage required, it is considered that storage of ash in the voids of closed mines within the near vicinity of the site is a more appropriate option.

It was stated that:

No proof has been offered to demonstrate that 15% water to "condition" the ash will contain the dust. Where is the risk analysis of this dust becoming airborne and impacting on health of inhabitants downwind?

Conditioning fly ash has been practiced for many years at Mt Piper Power Station and elsewhere around the world, where on average 15% water is used to condition ash, depending upon ash characteristics. Potential air quality impacts of fly ash dust would be assessed during the Project Approval stage of the project if the coal-fired option is selected.

It was claimed that:

The Proponent seems unsure whether the ash will be conveyed by an enclosed conveyor (p. 5.6) or a semi-enclosed conveyor (p. 4.3 and 9.9). "Semi-enclosed" needs further explanation.

The reference to an enclosed conveyor on page 5-6 (Section 5.2.3) of the EA is a typing error. The proposed semi-enclosed conveyor would be covered over the top. Further details of this conveyor would be provided at the detailed design stage, if the coal-fired option were selected.

It was stated that:

Potential dust emissions from ash waste that may result from wind erosion, transport and delivery of ash and human error need further study. It is unacceptable that no consideration or risk analysis of this issue was made in the Air Quality Assessment or in the PHA. New studies must be done immediately and not as part of a later DA. Water cart dust suppression is unreliable as it depends on the reliability of the operator.

Dust emissions from ash waste were not assessed as part of the PHA because the purpose of a PHA is to assess storage and handling of Dangerous Goods. A PHA must follow strict parameters, and fly ash is not classified as a Dangerous Good, assessment of ash waste is outside the scope of the PHA.

The Air Quality Assessment which formed part of the EA did not assess potential impacts of fly ash dust as the details of ash characteristics and management cannot be fully defined at this state. Air quality impacts with regards to fly ash will be assessed as part of the Project Approval stage of the project, if the coal-fired option is selected. Dust suppression measures would also be assessed at this stage.

It was stated that:

Ash should not be stockpiled as it is dangerous to human health should it escape into the air in a dry form. Any possibility of ash being blown offsite towards towns cannot be tolerated and must be investigated.

Upon arrival at the void, conveyed fly ash and trucked bottom ash would be placed in short-term temporary stockpiles before being transferred into the void immediately. Ash needs to be moved while still conditioned (damp) and as such would not have the opportunity to dry whilst outside of the void or while being transferred. Once in the void, ash would be compacted and layers would be progressively sealed off with cover material.

8.5 Potential Harmful Effects

It was claimed that:

Fly ash is harmful and leaches, as illustrated when Bayswater's first void was filled with ash at Ravensworth No. 1 mine. Cattle grazing on the revegetated site died having developed copper deficiency, because, as autopsy results showed, they had taken up molybdenum from the fly ash. The site had to be revegetated and fenced to prevent future cattle grazing there.

In early days Angus cattle were agisted on un-rehabilitated land adjacent to the Ravensworth ash disposal area. After a period some were noticed to have a dull reddish coat which is usually associated with a copper deficiency. The cattle were removed from the site and recovered to a healthy appearance – no cattle died. After the cattle were removed from the site, site rehabilitation was undertaken in accordance with the relevant approval conditions. Cattle have grazed on rehabilitated areas at Ravensworth continuously between 1999 and 2006, at which time they were removed because of drought. During this time no instances of ill health occurred amongst the cattle.

To ascertain potential interactions of rehabilitated ash disposal areas with vegetation, tests were conducted at the Ravensworth ash disposal area in 1998 by the Department of Agriculture into the relationship between the depth of top soil and the take up rates of materials such as copper into grasses and other species. Only lucerne appeared to present a problem. As a result lucerne has not been grown in the Ravensworth ash disposal area since.

As a matter of policy land considered potentially risky (e.g. areas awaiting rehabilitation) are fenced off. Note also that water collected from fly ash disposal points would not be used for irrigation but rather would be reused for ash management purposes.

It was queried:

Has consideration been given to the health risks of the operators related to fly ash handling?

A health risk assessment for fly ash has not been done as fly ash is not classified as a hazardous waste. However, due to the potential for impacts from dust, there would be a strong management focus on fly ash disposal management, should the coal option be selected.

It was claimed that:

There is no discussion of whether the fly ash constitutes an "Industrial Waste" or whether there should be a separate licence for the fly ash Disposal as a Waste Facility.

Fly ash is classified as General Solid Waste (Non-Putrescible) under the DECCW Waste Classification Guidelines (July 2009).

8.6 Groundwater Monitors

It was claimed that:

Another problem at Ravensworth No. 1 was that the spontaneous combustion in the site destroyed groundwater monitors. This is a potential problem at any disused mine site.

Four monitors were installed in the Ravensworth area in 1996 to measure ground temperatures in order to determine the presence or otherwise of spontaneous combustion. One was destroyed by ground movement (subsidence). Additional monitors were installed in the void constructed to collect runoff from the site in order to measure concentrations of materials such as molybdenum and selenium. Average levels of both have not exceeded regulated limits. This equipment has never been damaged or destroyed.

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9.0 Social and Economic

9.1 Introduction

This section outlines a series of issues which commonly arose within private submissions. These include impacts to local communities, the effects of the construction period and the effects of long term climate change.

9.2 Destruction of / Impacts to Rural Communities

One private submission was received regarding the potential of the project to destroy local rural communities and others expressing deep concern of the total impact and costs to the community. The local social and economic assessment carried out as part of the EA found:

- *the project with an estimated value in excess of $2 billion would provide a broad array of social and economic benefits including:*
- *direct employment for a construction workforce of up to 950 people and operational workforce of up to 160 people;*
- *indirect employment during the construction phase, resulting from increased demand for goods and services;*
- *significant capital investment during the construction phase; and*
- *securing an adequate supply of electricity to residents, businesses and industry of NSW.*

The proposed power station in combination with other major projects in the area (heavy industry/ mining) would impact on the local communities, in particular Singleton and Muswellbrook. A suite of management measures has been developed for the project to minimise the potential social impact of the proposal on local communities, many of which have also been included in the Statement of Commitments for the project. With regard to *the virtual destruction of many small rural communities,* a commitment addressing the social environment is as follows:

The Proponent will review and update the Social and Economic Assessment contained in this EA on the basis of the finalised detailed design and construction logistics report to confirm the extent of potential effects and will consult with Muswellbrook and Singleton Councils.

9.3 Impacts to Jobs

Some submissions were received expressing concern that construction of Bayswater B may result in loss of jobs in the renewables sector. This assumes that the construction of a power station would negate the government's commitments to research and development in the renewables sector. **Section 10.1** of this report outlines this in further detail, however, in summary, the EA recognised that this project would be undertaken within the context of ongoing renewables development and anticipated a range of solutions over time in response to energy needs, consumer demand and external forces such as the pending CPRS.

The approval of this project would not negate any of those policy positions or mandatory targets. GHG reduction targets are still in place and so research and development into renewables is still required. In addition, the CPRS is still pending. As such, this project would not, remove potential jobs from the renewables sector. This project is being undertaken in response to an energy shortfall that cannot be met within the timeframe by renewables. It is not intended to replace renewables or their growth and development in the future. It should also be noted that in addition to jobs in the renewable sector, the proposed project would also generate significant job opportunities (see Chapter 23 of the EA) during its construction and operation.

9.4 Social Impacts and Climate Change

The effects of climate change are understood as issues such as sea level rise, temperature rise, potential decrease in rainfall and exacerbated environmental conditions due to these factors such as drought, bushfire, increased threat of weed spread and over abundant species.

The attribution of these factors directly to climate change – and directly to the project – is an issue that can only be inferred. Given the lack of ability to quantify the impacts as a direct result of the project, the assessors (and regulators) must rely on aspects that can be quantified (such as greenhouse gas emissions) in order to adequately control tangible and measurable elements to be protective of secondary effects.

The EA was prepared specifically in relation to the requirements of the Director General and government agencies. These agencies regulate the assessment within a policy and guideline framework (such as the NGA and NGERs) in order to provide the basis for their adequate assessment of the extent of effects, benchmarked against NSW and Australia. This then provides them with a tangible and measurable means of determining the significance of the potential impacts or whether they are deemed to be within acceptable limits.

DECCW already has a series of documents designed to help anticipate potential impacts and is developing the Climate Action Plan which will provide the framework for adapting policy on climate action. In addition, the Local Government and Shires Association has developed the Climate Change Action Pack which aims to support Local Governments in responding to local needs.

The choice of which fossil fuel would be used for the Bayswater B project is currently undetermined and there are large differences between the GHG emissions resulting from each technology. Once the technology is chosen and the detailed design is undertaken, more studies can be undertaken into the level of GHG emissions.

9.5 Construction Stage and Construction Workforce

Details of the proposed construction camp or other means to house the construction workforce, would be addressed by the proponent at the detailed planning stage of the development. Section 18.4 of the EA states '*an assessment should also be undertaken of a long term viable use for the construction workers camp including beneficial re-uses and long term management or sale to identify the feasibility of this approach while retaining a fit-for-purpose utility.* As discussed in the submission the proponent could consider the design of the construction camp with an adaptive reuse such as aged accommodation or such in mind and following completion of construction, delivery of the accommodation to the community (sale or otherwise). The proponent for the development should at all stages consult with Muswellbrook and Singleton Councils.

10.0 Other Issues

10.1 Policy

Several submissions were received expressing concern over the policy context or alluding to the potential for the construction of a baseload power station to replace the need for investment and development of renewable energy sources and the reduction of GHG emissions.

Section 2.1.6 of the Bayswater B EA outlines the immediate Federal and State policy context. It also notes that:

"The proposed Bayswater B project does not replace the need for the continued development of renewable energy sources nor does it undermine the need for government policy to regulate and reduce GHG emissions. It is intended that the proposed Bayswater B project would be undertaken within this context. The project would be subject to both Commonwealth reporting legislation and the CPRS when commenced and would similarly be subject to NSW Government initiatives and policy requirements."

The State policy framework has been prepared within the context of Australia's Federal legislation and global commitments. These obligations still exist and are still required to be fulfilled.

It is noted that regardless of the level of GHG emissions, policy such as the MRET remains in place and will continue to drive investment and development of renewable energy sources. The Strategic Justification chapter in the EA also explains that notwithstanding initiatives to increase the quantum and contribution of renewable energy in whatever form it can be delivered, fossil fuel technology is currently the only technology that can be implemented on the scale needed within the time required.

The power station would be constructed and operated within the context of the policy framework (which as noted above will still need to be fulfilled) and under the legislative and regulatory auspices of both State and Federal governments. This means that there will be:

- A tender process for the power station that would need to include and comply with the requirements of the EA and the Concept Approval as issued by the Minister for Planning and informed by DECCW, DoP and agency and private submissions;
- A Detailed Design and Construction Logistics reporting stage that considers all the potential impacts in the finalisation of the engineering design;
- A secondary process of approval (Project Approval) once the final technology has been chosen, guided by DoP and DECCW, and detailed further assessment of many aspects on the basis of the chosen technology and its detailed engineering design;
- Construction and operation subject to the conditions of both Concept and Project Approval and Environmental Protection License conditions;
- Operation under a Carbon Pollution Reduction Scheme as this becomes enacted in law by the Federal government; and
- Operation under other State and Federal policy and regulation as relevant.

This project meets a specific need for baseload electricity generation required within the next decade that cannot be met by other sources such as renewables. This project does not negate policy position or compromise government's ability to meet obligatory targets under the RET, NRET or NSW State Plan. In fact the projections on demand assume the continued introduction of renewable energy sources into the generation mix.

In meeting the baseload generation capacity required for the near future, Bayswater B will help to meet other specific policies in the meantime that are in no way mutually exclusive to renewables targets:

- *Priority P2 of The NSW State Plan (2006, updated 2008)* "The Government needs to ensure we have the right infrastructure at the right place at the right time."; and
- *Priority E2 (a):* "Electricity supply reliability is considered a basic service and critical to the quality of life of residents and the State's business competitiveness."

10.2 Alternative Baseload Power Scenarios

Some private submissions were received citing alternate reports and studies that have modelled or projected a shortfall in baseload generation capacity at differing times, or that there would be no shortfall in baseload power at all. The implication of this is that the choice of generating technologies could potentially be expanded if more time is available to develop them (if they need to be developed to begin with). Further, that the shortfall (if there is one) can adequately be covered by the planned increase in renewable energy, or that a vigorous effort behind the development of renewables would defer the need for a fossil fuel plant in the short term.

It is worth noting that this is an issue with a high level of public interest and so there are a range of reports and studies that cite a variety of projections and scenarios.

While the Owen report found the ability to meet the need for additional baseload generation would only come from a coal or gas technology (given the baseload power need and the timeframe within which it is required) that report has received some criticism in the public arena and some submissions were critical of it as 'just another scenario'.

Notwithstanding this, Owen's report uses TransGrid's projections – not projections modelled by Owen. TransGrid's projections are based on a variety of factors as outlined in the EA, and can be revised upwards or downwards in response to national and international factors. This was also discussed in the EA in relation to the 2008 projections being revised downwards given the deep and (at the time believed to be lasting effects) of the Global Financial Crisis.

Most scenarios appear to agree that there will be a shortfall at some point, the disagreement is over when this will occur. While a longer available timeframe could increase the number of technologies potentially available, the question becomes whether those other technologies are viable and practical at such a large scale. The difficulty and practicality of using renewables to provide baseload power is discussed in **Chapter 4** above and Chapter 2 of the EA.

10.3 Planning Process

Objection to Part 3A and the principle of Concept Approval…if a developer were to proceed with a concept approval there is no assurance in the present process that issues of concern would be further examined in the future.

Part 3A of the EP&A Act affords potential developers of land with a degree of certainty when developing land for a range of purposes by providing an 'in principle' type approval. A concept approval may be sought for a proposal which has as yet not had all of the detail finalised or technology guaranteed for a variety of reasons, but which is accompanied by an environmental assessment which provides an overview of the project and its components, and how it is likely to be constructed and operated. The assessment for a Concept Approval is still required to examine in a rigorous manner the impact of the potential project on the surrounding receiving environment. This process provides potential developers with a degree of certainty that the proposed project, while being subject to further assessment, is likely to achieve approval if it is consistent with the Concept Approval. It also allows a proponent to examine a range of potential technologies and to select the best possible to suit the proposed development.

A project cannot be built with a Concept Approval alone. It must be followed by a Project Approval. The full design and technological details are then further assessed to determine the impact of the detailed proposal on the receiving environment.

10.4 Lack of Time for Assessment

One submission referred to the lack of time for assessment and advertising of the proposal. The EP&A Act and its Regulation set the statutory period within which the EA is to be exhibited. The exhibition period extended from the 5 September to 26 October and fits with due process by exceeding the minimum statutory period required.

It should also be noted that DoP continued to receive late submissions received after the closure of the exhibition period. Those late submissions have been included in this Submissions Report.

Advertising of the proposal occurred in all of the major cities, regional and local newspapers in accordance with regulatory requirements.

10.5 Additional Investigations

Request that any additional materials, reports, arguments offered by the proponent or requested by the DoP be made public for further comment.

All information requests by DoP and other submissions have been addressed within this report, which is a public document. Under the provisions of the EP&A Act, this report will be made available for public scrutiny but there is no further provision in the legislation for continued comment on the current Concept Application. At such time as the Bayswater B project is progressed to a Project Application, the process undertaken for the Concept Application (including the undertaking of additional investigations and the exhibition of documentation and the opportunity to make submissions) will apply as required by the relevant legislation.

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PART C – Responses to Group and Agency Submissions

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11.0 State Government

11.1 Introduction

This section outlines the issues raised by the following State agencies or State bodies:

- DECCW
- NSW Health
- NSW Office of Water (NOW)
- Roads and Traffic Authority (RTA)
- Department of Industry and Investment
- Hunter-Central Rivers Catchment Management Authority
- John Kaye, MP for the NSW Greens.

11.2 DECCW

DECCW noted that it did not object to the proposal as described in the EA and included recommended conditions of approval within their submission. It raised however issues for clarification in the Submissions Report.

11.2.1 Air

A full response to the DECCW issues and recommendations with regard to air quality is provided in **Appendix B**. In relation to Section 2.2.4 of the DECCW submission (Hydrogen Fluoride Exceedences), DECCW requires that the proponent "demonstrate that no adverse air quality impacts are likely to result from HF emissions from the proposal". This issue was discussed in **Chapter 5** also, based on a technical opinion received from Dr David Doley of the University of Queensland.

11.2.2 Greenhouse Gas Emissions

DECCW notes that either fuel option will represent an additional significant source of GHG emissions. This is presented by DECCW as an observation. This has been discussed in full in **Chapter 6** of this Submissions Report.

It is also noted that it is unlikely that the costs of CCS presented in the EA will adequately reflect the true costs of installation and operation given the current state of knowledge of CCS. This is noted and reference is provided to the regular review of CCS options within which economic factors/costs would be a consideration.

DECCW note that a more detailed assessment of the comparative costs of the CPRS for both fuel options would be warranted. The status and likely content of the CPRS is currently unknown. It would be appropriate and more efficient to undertake a review of this nature once the content and framework of the CPRS is known.

DECCW recommends that:

The proponent shall ensure that the design and construction of the project provides for the cost-effective retro-fitting of post-combustion carbon capture technology.

The proponent shall continue to evaluate the availability and feasibility of measures to reduce the GHG emissions of the project, including carbon capture, re-use or storage, with the aim of identifying for implementation technically and economically feasible measures to reduce greenhouse gas emissions.

The proponent shall report on the status and outcomes of its evaluation to the Director-General every three years from the commencement of operations of the project unless otherwise agreed by the Director-General.

Agreed, as per Section 10.4.4 of the EA.

DECCW further recommends that:

If technically and economically feasible measures to reduce GHG emissions are identified by the proponent, and:

1) if a national legislative scheme to control and reduce GHG emissions is either not in effect, or not applicable to the project; or

2) if the proponent is not in full compliance with that scheme,

the proponent will be required to prepare and submit to the EPA, a pollution reduction program designed to implement the measures identified, within a practicable time period, to the satisfaction of the Director-General of DECCW.

Agreed.

11.2.3 Noise

Section 4.1 – Conveyor Connecting to Antiene Coal Loader:

The EA indicates that the coal conveyer has been included in the impact assessment (refer Appendix F – section 2.4, Fig 2 and sections 8.2 and 11.2 and associated figures); however, it is difficult to determine from the figures provided if this is actually the case. DECCW recommends that the proponent confirms as part of its response to submissions that noise generated from the coal conveyor was considered in the noise impact assessment.

Section 8.2 of AECOM's Noise and Vibration Assessment Report in Appendix E of the EA for the operational noise assessment states "The coal fired plant was modelled with the contribution of the coal and ash conveyor belts…".

The coal conveyor was modelled with the following Sound Power Level.

Table 5: Coal Conveyor Modelled Sound Power Levels

Equipment	**Sound Power Levels per Metre, L_W dB/m**								
	Octave Frequency Bands, Hz								
	31.5	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Coal Fired Plant									
Coal Conveyor	88	90	88	81	93	87	84	75	68

Section 4.2 – Low Frequency Noise:

From the assessment provided it does not appear that low frequency noise will be an issue at the proposed power station. However, the proponent should be aware that low frequency noise emissions from gas turbine power stations have recently been an issue in NSW. As such, DECCW draws the proponent's attention to the application of modification factors that have been applied to the noise limits presented in Appendix B (to the DECCW letter).

AECOM's operational noise assessment, based on the proponent's proposed equipment selection, has identified that low frequency will not be an issue. However, in Section 8.6.1 of the *Noise Impact Assessment* in Appendix E to the EA the following has been recommended:

> *"During the detailed plant equipment selection it is recommended that plant equipment selection takes into consideration low frequency issues to avoid any potential low frequency 'annoyance' characteristics."*

Section 4.2 – Recommended Conditions of Approval:

The DECCW has provided a number of conditions of approval as outlined in Attachment B to the DECCW letter (Recommended Conditions of Approval – Proposed Bayswater B Power Station Extension (MP09_0119), items 28 to 35.

Items 28 and 29

DECCW proposed noise limits (item 28 and 29) are deemed to be conservative, however the predicted noise levels presented in AECOM's noise assessment report indicate that the project would comply with the intrusiveness criterion of $L_{Aeq\ (15\ minute)}$ of 35 dB(A) during the daytime, evening and night-time periods at all the assessment locations (including Locations 1 and 2). In addition, operational noise assessment indicates that the project would comply with the night-time sleep disturbance criterion of $L_{A1\ (1\ minute)}$ of 45 dB(A) during night-time period at all the assessment locations.

Item 30

Item 30 describes the meteorological conditions applicable to the proposed noise limits. As requested by DECCW, AECOM undertook noise modelling predictions under noise enhancement meteorological conditions as follows:

- Source to receiver winds 3 m/s (in all directions) and
- F-class stability plus source to receiver winds 2 m/s (MET Category 6).

The predicted noise levels in AECOM's report indicate compliance at all locations under noise enhancement meteorological conditions. Therefore, compliance with requirements of Item 30 is predicted.

Items 32 to 35

Items 32 to 35 are deemed acceptable and generally consistent with AECOM's recommendations.

11.2.4 Water

Section 5.1:

DECCW has recommended that there be no discharge of waters from the ash disposal facility, unless it can be adequately demonstrated that any water discharged is clean water (that is, it is of a quality equal to or better than receiving water quality).

As discussed in Section 13.3.4 of the EA, the potential for conditioned ash disposal to impact upon groundwater quality depends upon the characteristics of the coal and of the combustion and ash collection processes adopted. Additionally, the designs required to manage waters from a mine void used for ash disposal depends on the geology and hydrogeology of the specific location selected. If the coal fired option is selected for Bayswater B, these aspects would be defined during the Project Approval and detailed design phase. This information would inform an Ash Disposal Plan prepared as part of the Operation Environmental Management Plan for the proposed power station. The Ash Disposal Plan would detail criteria and management measures with regards to water quality and would be prepared in consultation with DECCW at that point in time.

The EA indicates that during the construction phase of the project, namely the installation of piles, groundwater will be encountered. The EA does not provide any further information on how this groundwater will be managed or treated during this work.

As detailed in Section 13.3.2 of the EA, groundwater is likely to be encountered during installation of piles. Although piles will be installed to a depth below groundwater level, these works are not expected to result in any release of groundwater at the surface. Any groundwater that is released would be managed in accordance with water control measures to be detailed in the Construction Environmental Management Plan (CEMP) for the proposed project.

Recommended Conditions of Approval:

36. Except as may be expressly provided by a licence under the Protection of the Environment Operations Act 1997 in relation of the development, section 120 of the Protection of the Environment Operations Act 1997 shall be complied with in connection with the carrying out of the development.

Agreed.

37. Soil and water management controls shall be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities in accordance with the requirements outlined in Managing Urban Stormwater: Soils and Construction (Landcom, 2004).

Agreed.

11.2.5 Aboriginal Cultural Heritage

This discussion relates to Section 6 of the DECCW letter of submission to DoP. DECCW summarise the key issues within four sub-groups. These are summarised in **Table 6** below with the detailed discussion provided thereafter.

Table 6: Aboriginal Cultural Heritage Issues

Issue Raised	Summary Response
Incomplete local Aboriginal community consultation process	Detailed consultation has been undertaken with DoP and DECCW since the Planning Focus Meeting in July 2009. Subsequent meetings included August and September. At each of these meetings, the issue of Aboriginal consultation was raised by AECOM. It was noted that the Interim Community Consultation Requirements (ICCRs) were being followed but that the timeframe required for the ICCR process was inconsistent with the EA timeline. It was noted that the EA would include information on the consultation to date but that the process would not be complete. It was noted that the completed information would be provided with the Submissions Report. The EA, as noted to the agencies, included consultation up to the beginning of September 2009. The following sections of this Submissions Report include the completed consultation process information.
Registration of identified Aboriginal sites	These had not been registered at the time of the exhibition of the EA. These sites have now been formally registered.
Inadequacy of mitigation and management commitments	DECCW require a detailed level of mitigation and management. It is recognised that this will be required within an Aboriginal Cultural Heritage Management Plan to guide the ensuing steps of the process. However, the level of detail required is not appropriate for a Concept Approval or a management plan associated with a Concept Approval. It is recommended that detailed mitigation is outlined in a management plan attached to a Project Approval which will be completed on the basis of a chosen technology, detailed design (and finalised disturbance footprint).
Recommendations for the development of an Aboriginal Cultural Heritage Management Plan	These are noted and would be developed on the basis of a Project Approval by the proponent.

Section 6.1 Aboriginal Community Consultation

Aboriginal Stakeholder Consultation was conducted in accordance with the *National Parks & Wildlife Act 1974*: Part 6 Approvals – Interim Community Consultation Requirements for Applicants (ICCRs) and is documented in a consultation log included at Appendix E of the assessment provided with the EA.

In recognition of the short EA preparation timeframe leading up to exhibition, the Director-General's Requirements for the EA did not require the ICCRs to be followed, merely that evidence of effective consultation be undertaken to determine and assess impacts and mitigation measures.

Due to the timeline (as noted in the table above), Aboriginal consultation followed two paths, with the initial archaeological survey and assessment conducted directly in consultation with Wanaruah Local Aboriginal Land Council. This facilitated prompt fieldwork and reporting, while following the lengthy timeframes for each of ICCR consultation stages in parallel in the knowledge that the full cultural heritage assessment would not be completed until the Submissions Report. This process was discussed with DoP and DECCW at each meeting, including the Planning Focus Meeting in July 2009.

This draft Aboriginal heritage as prepared for exhibition has been distributed to Aboriginal stakeholders identified through the ICCR process, but has yet to incorporate any comments because the ICCR timeframes have not yet expired for consideration of the draft report.

However, the following sections of this report, provide the concluding input from the consultation process.

As of mid-September 2009, verbal communications with Aboriginal stakeholders indicate satisfaction with the assessment of significance and management measures proposed in the draft EA. Written submissions and additional results of Aboriginal consultation will be incorporated in the final EA following the exhibition period. These are provided in **Appendix C** of this report for reference.

Following the Aboriginal consultation as set out in the EA, an Aboriginal stakeholder meeting of 9 September 2009 was held at Bayswater Power Station and included a Powerpoint presentation of key issues followed by an inspection of the actual study area and several Aboriginal sites. The presentation explained the Aboriginal sites identified through archaeological survey, presented a scientific assessment and explicitly requested feedback on *socio-cultural values* and *socio-cultural significance assessment*. A proposed general program of test excavation, salvage excavation and "collect and set aside" procedure was discussed and feedback sought.

During the discussions throughout the day there was general agreement to the socio-cultural significance assessment presented (see **Appendix C** for wording). In general, Aboriginal stakeholders were concerned for the proper care of Aboriginal sites and for the appropriate level of excavation to be conducted in areas to be impacted. The protection of the two sites of high significance was discussed and agreed.

The attendees and Powerpoint presentation for the meeting are provided at **Appendix C** and Aboriginal stakeholder submissions received following the meeting included at **Appendix C**. Aboriginal stakeholder submissions are summarised in **Table 7** together with responses to issues raised in the submissions.

Table 7: Summary of Aboriginal Stakeholder Submissions and Response

Aboriginal Stakeholder	Issues Raised	Response to Issues Raised
Wanaruah Local Aboriginal Land Council letter of 24/9/09	1. Concern that development will disturb, damage and destroy highly significant sites as indicated in the draft report 2. All sites have high cultural significance 3. Sites with porcellanite assemblages should be protected 4. The natural environment of the escarpment exposure with the eagles nest should remain intact. 5. If feasible, the two plant option footprints should be moved slightly to the north west and 150 m from its tributaries and that an area within 100 m of the creeklines be fenced off and managed as a Cultural Heritage Management Zone. All artefacts from excavated sites would be placed within the zone. Archaeological excavations would be carried out on impacted sites. If the suggested move is not feasible, then the heritage management commitments in the draft report are agreed. 6. Changes to design should include a re-assessment in consultation with the Aboriginal community 7. A Cultural Heritage Liaison Committee should be established to advise the future contractor.	1. The draft report states that the two sites of high scientific significance will not be disturbed and will be protected 2. Noted 3. Noted. It is anticipated that final project design and project approval should take note of this 4. Noted 5. Noted 6. The current EA is for a concept and design has not been finalised. It is anticipated that the proponent for the project approval application will continue consultation with the Aboriginal community. 7. It is anticipated that the proponent for the project approval application will continue consultation with the Aboriginal community. The timing of final project approval and who the proponent will be has not presently been determined.

Aboriginal Stakeholder	Issues Raised	Response to Issues Raised
Kathleen Steward-Kinchela trading as Yinaar Cultural Services – fax of 10 November 2009	1. Concern that development will disturb, damage and destroy highly significant sites as indicated in the draft report 2. All sites have high cultural significance 3. Sites with porcellanite assemblages should be protected 4. The natural environment of the escarpment exposure with the eagles nest should remain intact. 5. If feasible, the two plant option footprints should be moved slightly to the north west and 150 m from its tributaries and that an area within 100 m of the creeklines be fenced off and managed as a Cultural Heritage Management Zone. All artefacts from excavated sites would be placed within the zone. Archaeological excavations would be carried out on impacted sites. If the suggested move is not feasible, then the heritage management commitments in the draft report are agreed. 6. Changes to design should include a re-assessment in consultation with the Aboriginal community 7. A Cultural Heritage Liaison Committee should be established to advise the future contractor.	1. The draft report states that the two sites of high scientific significance will not be disturbed and will be protected 2. Noted 3. Noted. It is anticipated that final project design and project approval should take note of this 4. Noted 5. Noted 6. The current EA is for a concept and design has not been finalised. It is anticipated that the proponent for the project approval application will continue consultation with the Aboriginal community. 7. It is anticipated that the proponent for the project approval application will continue consultation with the Aboriginal community. The timing of final project approval and who the proponent will be has not presently been determined.
Luke Hickey trading as Hunter Valley Cultural Surveying fax of	1. The area is of high significance to Aboriginal people due to grindstones and artefact distribution across the larger area 2. Agrees with the draft report recommendations 3. Agrees with the significance assessment in the draft report 4. Requests 100% survey of the gas pipeline for the gas fired option	1. Noted 2. Noted 3. Noted 4. The current EA is for a concept and design has not been finalised. It is anticipated that the proponent for the project approval application will continue consultation with the Aboriginal community and undertake further assessment as warranted
Margaret Matthews trading as Aboriginal Native Title Consultants	1. The area is of high significance to Aboriginal people because there is a lot of heritage and culture in this area 2. Agrees with the draft report recommendations 3. Agrees with the significance assessment in the draft report 4. Recommends some excavations mainly along the creek areas	1. Noted 2. Noted 3. Noted 4. Noted – this is in line with the draft report recommendations

Aboriginal Stakeholder	Issues Raised	Response to Issues Raised
Darrel Matthews trading as Upper \hunter heritage and Consultants	1. The area is of high significance to Aboriginal people because there is a lot of heritage and culture in this area 2. Agrees with the draft report recommendations 3. Agrees with the significance assessment in the draft report 4. Recommends some excavations mainly along the creek	1. Noted 2. Noted 3. Noted 4. Noted – this is in line with the draft report recommendations
Christine Archbold trading as Hunter Valley Culture Consultants	1. The area is of high significance to Aboriginal people because there is a lot of heritage and culture in this area 2. Agrees with the draft report recommendations 3. Agrees with the significance assessment in the draft report 4. Recommends some excavations mainly along the creek	1. Noted 2. Noted 3. Noted 4. Noted – this is in line with the draft report recommendations
Clifford Matthews trading as Mingga Consultants	1. Agrees with the draft report recommendations 2. Agrees with the significance assessment in the draft report	1. Noted 2. Noted
Michele Stair for Rodney Matthews trading as Giwirr Consultants	1. Agrees with the draft report recommendations 2. Agrees with the significance assessment in the draft report	1. Noted 2. Noted

Registration of identified Aboriginal Sites

The DECCW submission notes that site cards had not been submitted. AECOM has submitted site cards as of November 2009.

Mitigation and Management Commitments

DECCW notes concerns with the lack of detailed methodology for mitigation measures. Until the detailed design is prepared, the conceptual methodology provided in the EA cannot be developed in more detail. It is anticipated that a detailed methodology will be prepared at the Project Approval stage.

The proposed fencing is intended for the prevention of inadvertent access and disturbance of sites during construction. The EA addresses land management as it pertains to mitigation of development impacts and is not intended to address long term land management outside of the development impact area. It is not appropriate to provide permanent fencing of heritage sites as any such fencing may lead land managers to the incorrect perception that heritage values are limited to a defined “site” area. Heritage values within archaeological deposit extend outside of the “site” area.

The locations of collected artefacts will be determined at the Project Approval stage. The concept of collect and relocate is to determine the correct locations as close as possible outside the impact area but within the same landform element close to the original site. Actual locations cannot be determined until the project design is finalised.

The report identifies a commitment to develop a research design for the purpose of excavations developed in consultation with DECCW. The details of location and extent of excavations can only be developed once the final technology is chosen and the project design is finalised (and therefore once the disturbance footprint is known).

DECCW notes that the use of machinery in large scale excavation to assist in discovery is not supported. The use of machinery in archaeological test excavation has been a common practice approved by DECCW for the last two decades. The large scale excavation proposed would only be undertaken in areas not covered by detailed hand excavations and in areas to salvage Aboriginal artefacts that would otherwise be lost through development impact. Large scale mechanical excavation methodology has been successfully employed in recent years such as at the large George Street, Parramatta excavation as an adjunct to careful hand excavation and is justified by the significant findings that result. The methodology would be developed in the proposed research design.

Development of an Aboriginal Cultural Heritage Management Plan (ACHMP).

Development of an ACHMP may be appropriate following the finalisation of design, but cannot be presently completed at the concept approval stage due to the lack of development detail necessary for such a document.

Recommended Conditions of Approval – Aboriginal Heritage

The suggested conditions of approval should be reviewed at the Project Approval stage and are not suited to Concept Approval. This is primarily because without a preferred technology and detailed design, the final disturbance footprint is not known. As noted in the EA, the Proponent would undertake a series of commitments as part of the Project Application. An Aboriginal Heritage Management Plan is an important guiding document and so is more appropriate in accordance with a Project Approval and subsequent construction and operations management.

11.2.6 Flora and Fauna

This section relates to Section 7 of the DECCW submission.

Section 7.1 Gas Pipeline Route (Lateral)

DECCW have noted that the survey coverage did not include 100% of the pipeline route. This was because the pipeline route at this stage is indicative only. The EA included a deskbased indication of the key risks to flora and fauna.

It is recommended that if gas is chosen as the preferred option, the flora and fauna report should inform the detailed design process and that a more confirmed pipeline route then be surveyed as part of a Project Application.

Section 7.2 Timing of Fieldwork

The DECCW submission notes that the biodiversity survey work was done well and that further survey for Green and Golden Bell Frogs, the Diuris orchid, Barking Owl and hollow bearing trees include consideration of rough barked trees. This is noted and would be incorporated into a Project Application.

Section 7.3 Biodiversity Offsets

A key factor in the process moving forward will be the iterative process to avoid or reduce potential impacts to as low as reasonably practicable. This would include:

- Detailed design (once a chosen technology has been determined) to take into consideration the current results of the flora and fauna report and any further surveys undertaken as part of a Project Application;
- Detailed ecological assessment then to be undertaken on the basis of the detailed design and confirmed footprint locations of associated infrastructure;
- Amendments to detailed design as applicable to avoid or reduce potential impacts further.

Once this iterative process is complete and there are residual impacts apparent, a habitat offset package would need to be developed in consultation with DECCW. As noted in Section 15.7 and Appendix F of the EA, the following biodiversity offsetting principles apply when developing offsets for the site:

- Impacts must be avoided first by using prevention and mitigation measures;
- All regulatory requirements must be met;
- Offsets must never reward ongoing poor performance;
- Offsets will complement other government programs;

- Offsets must be underpinned by sound ecological principles;
- Offsets should aim to result in a net improvement in biodiversity over time;
- Offsets must be enduring and they must offset the impact of the development for the period that impact occurs;
- Offsets should be agreed prior to the impact occurring;
- Offsets must be quantifiable and the impacts and benefits reliably estimated;
- Offsets must be targeted;
- Offsets must be located appropriately;
- Offsets must be supplementary, and;
- Offsets and their actions must be enforceable through development consent conditions, licence conditions, conservation agreements or contacts.

11.2.7 Waste

DECCW note in Section 8 of their letter that should the coal fired option proceed, a comprehensive environmental management approach would be needed which includes the ongoing evaluation and promotion of beneficial re-use of the ash.

The above actions would be undertaken as part of the Project Approval stage, if the coal-fired option is selected, and would form the basis of the Ash Disposal Plan for the project.

11.3 NSW Health

11.3.1 Air Quality

Air quality throughout the Hunter region is a concern to the broader population, from those in the Upper Hunter communities within close proximity of the proposed power station, such as Singleton and Muswellbrook, to those located further a field in centres such as Maitland and Newcastle. This office receives many enquiries in relation to the impact of air quality on the environment and human health. From the data provided in the EA it would appear that air quality would be mainly affected by dust emissions during the construction phase and ash disposal (for the coal-fired option). The proponent should consult with the Department of Environment, Climate Change and Water (DECCW) and processes should be in place so that the community can seek remedial action from the proponent in a timely fashion should air quality become problematic.

With regard to the choice between the gas-fired power station and the coal-fired power station, from the point of view of human health it is preferable to choose the proposal which would have the least impact on air quality, both in the short-term construction phase, and the longer-term operational phase. From our assessment of the documentation provided to us, this would appear to be the gas-fired option. The reasons for this include the shorter construction period, the assessment of no exceedences for NO_2, carbon monoxide or any air toxics, no emissions of SO_2 and hydrogen fluoride, and no need for ash disposal thereby minimising dust emissions.

Noted.

11.3.2 Surface Water

It is noted that the EA indicates that the construction and operational phases of the proposed power station would not impact downstream off-site waterways, or result in down-stream water pollution or negative impacts on other water users.

Noted.

11.3.3 Groundwater

The EA identifies that there are several registered bores within a 5 km radius of the proposed power station, including for town water supply. For this reason protection of groundwater quality is essential. The EA indicates that the greatest potential for impact on groundwater would come from accidental spills and leaks of fuels, solvents or chemicals, and from the disposal of ash to open cut mine voids (for the coal-fired option). It is noted that an Emergency Spill Preparedness and Response Plan would be prepared as part of the Construction Environmental Management Plan (CEMP) and the Operating Environmental Management Plan (OEMP). It should be expected that the proponent puts in place measures that will ensure groundwater is not affected.

Noted.

11.3.4 Traffic and Transport

It is noted that the EA suggests the possible inclusion in a Traffic Management Plan of restrictions on traffic movements during peak hours and school bus hours. This option is encouraged to minimise risk to other road users.

A Traffic Management Plan would be an integral part of the CEMP and OEMP for the proposal and would provide protocols and management measures restricting heavy vehicle movements to outside the school bus hours, peak periods and would clearly set out haulage routes to be followed by all drivers.

11.3.5 Noise and Vibration

It appears that the main potential for impact from noise and vibration would be during the construction phase of the project. It is recommended that the proponent consult with the DECCW and that processes are in place so that the community can seek timely remedial action should noise generation become problematic to nearby residents.

The DECCW has been consulted at all stages of preparation of the EA and the issues raised by the DECCW with regard to the EA are addressed in **Section 11.2** above. A *Noise Management Plan* would be included in the CEMP and OEMP for the project and include a complaints register and early notification of the community prior to site preparation and construction activities occurring.

11.3.6 Environmental Management

The EA states that upon granting of Concept Plan Approval a Construction Environmental Management Plan and an Operating Environmental Management Plan would be provided.

We would be pleased to be given the opportunity to comment on these Plans should this occur.

Noted.

11.4 NSW Office of Water (NOW)

With water supply security a key issue for power generation, it needs to be emphasised that integration of water management between the related power stations will be subject to the available determinations for each of the differing access categories of high security, general security and major utility security licences held by MacGen at any particular time. This means that in periods of low water availability major utility, high security and general security access licence volumes may be subject to a reduction in available share.

Noted.

Reductions in a licence share are affected by an available water determination announcement (AWD) made at the beginning of each water accounting year being 1 July. Any AWD reduction announcement on 1 July prescribes the maximum reduction to affect water licences during the subsequent 12 month period. In the event that climatic conditions are favourable and storages are subject to inflows, then the AWD will be positively amended to reflect the increased availability of water.

Noted.

MacGen has outlined a number of options for cooling, which require water varying from 1700ML/year to 2500ML/year. It is understood that power generation water demands will vary depending on the energy source; Gas driven power generation requiring 1700ML/year and coal driven generation requiring 2500ML/year. It is stated in the EA that some 4640ML/year of entitlement is held by MacGen, which would be made available to supply the Bayswater B Power Station.

Noted.

General and High Security entitlements are proposed to provide the water required for the Bayswater B Project. As stated in the report, the General Security entitlement and to a much lesser extent, the High Security entitlements are subject to restrictions during periods of reduced allocation, under the provisions of the Water Sharing Plan for the Hunter Regulated River Water Source. In the event of severe drought conditions, Bayswater B and other users may be subject to further curtailments as a result of Ministerial determinations. If these water shortages lead to electricity generation cutbacks, the Australian Energy Market Operator (AEMO) may also place further requirements upon the generators. It is noted that the proposed Bayswater B Power station uses significantly less water per MWh than either of the existing stations operated by MacGen.

Noted.

NOW requires that appropriate water supply arrangements be made to service the proposed Bayswater B power station sufficient to maintain its output during the drought of record *(1930s-40s). The water supply arrangements shall also ensure the ability of the existing Bayswater and Liddell power stations to maintain 80% annual capacity factors during the drought of record (1930s - 40s).

Noted.

NOW recommends the following conditions be satisfied at the time of lodgement of an application for Project Approval:

- ***MacGen must ensure it has adequate water supply for all existing and future (Bayswater B) electricity generation demands.***
- ***The project proponent shall demonstrate that water has been secured sufficient to maintain Bayswater B's full output during the drought of record (1930s – 40s).***
- ***In the event that water supply is not adequate to meet the Bayswater B demands additional water rights shall be sought via the water market or by other means identified in the EA for Concept Approval.***

Noted.

Water is in high demand and this demand will continue to grow commensurate with the competing requirements of industry growth, population growth and associated power growth requirements overlaid by the potential climate changes that are predicted. Therefore, it is critical that any additional water requirements for power generation associated with the proposed new power station be met through the water market transfer system in accordance with water licence dealing rules and the provisions under the Hunter Regulated River Water Sharing Plan.

Noted.

11.5 Roads and Traffic Authority (RTA)

The interchange at the intersection of the New England Highway and Bayswater River Road shall be upgraded and shall be designed and constructed in accordance with the RTA Road Design Guide, relevant Austroads guidelines and Australian Standards to the satisfaction of the RTA.

All works associated with the proposed development shall be at no cost to the RTA.

Traffic volumes generated by the operation of the proposed development are not predicted to be significant and are not considered to impact on the current Level of Service that the New England currently has adjacent to the Bayswater Liddell complex. Since there would not be an appreciable or adverse impact on the operation of New England Highway there is no justification for upgrade works resulting from the proposed Bayswater B project.

The design of the existing Bayswater interchange was previously approved by the RTA The traffic generation from the proposed Bayswater B project and the current traffic count volumes on the New England Highway show that the proposal does not change the level of functionality of this interchange and upgrading of the interchange as a consequence of this project is not justified or warranted.

11.6 Department of Industry and Investment

Recommends use of world's best practice low emission technology

In assessing available technologies for the Bayswater B Project , factors considered included requirements for proven, commercially available technologies, highest environmental performance, performance in terms of annual sent out output and thermal efficiency at Bayswater B site conditions (compared to design or ISO conditions), capital and operating costs, impact of various plant configurations and equipment options. Due to limited availability of water for cooling purposes we have chosen air cooled condensers which results in a loss of thermal efficiency and a corresponding increase in GHG emissions for the same outputs compared to that of wet coolling. We have forgone a small number of features which yield a disproportionately small efficiency gain for a large additional capital expenditure. It should be remembered that site conditions in the Hunter Valley (warm temperate) mitigate against efficiencies which may be attained in say northern Europe.

As a consequence Combined Cycle Gas Turbine, F Class Gas Turbine technology using Air Cooled Condensers yielded 50%$_{so}$ thermal efficiency for gas and Ultra Supercritical technology using Air Cooled Condensers yielded 39.2%$_{so}$ thermal efficiency for coal.

Recommends the project be CCS ready and this be a condition of approval

There is a commitment for the Bayswater B power station to be CCS ready and for there to be a regular review and implementation assessment of CCS options. This regular review and trigger system has been included in DECCW's recommended conditions of consent.

The Department would seek to understand the air quality impacts of the proposal on properties south west of the proposed power station. Vineyards, horse studs and other rural properties along the Golden Highway north of Jerrys Plains appear to have been overlooked as a sensitive receptor in the EA. The Department would seek further clarification of the impact on this area.

The contour plots contained in the Air Quality Impact Assessment include the areas to the southwest of the proposed Bayswater B Power Station. The information contained in the Air Quality Impact Assessment indicates that the proposal satisfactorily meets the DECCW's impact assessment criteria for human health and amenity.

Whilst the Air Quality Impact Assessment indicates that fluoride levels associated with power generation are important, adverse impacts on crops are not expected to occur for the following reasons:

The Air Quality Assessment has assumed emissions of fluoride would be at the regulatory limit of 50 mg/m^3. Monitoring of emissions from Bayswater and Liddell Power Stations shows that fluoride levels are less than 20% of the regulatory limit. Hence, the actual levels of fluoride will be significantly lower than the predictions that have been presented in the air quality assessment.

Ongoing monitoring of crops in the Hunter Valley has not shown any adverse impacts to the growth of crops resulting from power generation.

With regards to horse studs, the assessment has indicated that no significant risk to horses is anticipated as a result of the proposed project. Refer to Section 5.5 of this report for more detail on impacts of fluoride deposition from the coal-fired option on vineyards, horse studs and other receptors.

11.7 Hunter-Central Rivers Catchment Management Authority (CMA)

The Hunter-Central Rivers CMA submitted the following comments.

The Catchment Action Plan (CAP) includes a guiding principle that "Reducing the demand for energy and increasing the use of renewable sources of energy should be supported to reduce GHG emissions". Assuming all loss of native vegetation will be appropriately offset, the CMA would support the development of a gas fired power station over a coal fired one.

The preference for gas fired technology is noted.

Native Vegetation

As per the CAP and the Native Vegetation Act 2003, vegetation clearing should be avoided and where this is not possible, native vegetation offsets should be used. Although the proposal is being assessed under Part 3A of the EP&A Act and therefore the Native Vegetation Act 2003 does not apply, the principles of the CAP and the Act should still apply. Specifically, the CMA's position is that vegetation in over-cleared landscapes and endangered ecological communities cannot be offset.

The proposal has been located primarily on cleared land, however, there is some linear infrastructure that will require some clearing. We have sought to minimise the impact of the infrastructure where practicable. This complies with the CAP principle of wherever possible, restrict the development to cleared land, and where the loss of native vegetation is unavoidable, offset. The proposal has made genuine attempts to avoid and minimise impacts to native vegetation and other environmental assets (drainage lines), and also commits to the development of an offset plan to offset the unavoidable impacts. This is clearly stated in Section 6.6 of the Flora and Fauna Assessment contained in Appendix F of the EA, prepared by Eco Logical Australia (ELA).

Under the Native Vegetation Act, broad-scale clearing of native vegetation means the clearing of any remnant native vegetation or protected regrowth. There is a condition attached to the objects of the Act that it seeks to prevent broad-scale clearing unless it improves or maintains environmental outcomes. The purpose of an offset is to counter balance/compensate the loss of native vegetation. Section 6.6 of Appendix F of the EA states "Offsets should aim to result in a net improvement in biodiversity over time".

Regional Significance of Native Vegetation

The proposal is in an "over cleared" landscape. It is the CMA's position that these landscapes are regionally significant, provide no opportunities for offsets and should not be cleared any further.

Section 4.1.2. of Appendix F of the EA 1 refers to Peake (2006), who recognized that Central Hunter Ironbark, Spotted Gum – Grey Box Forest has been significantly cleared. The other vegetation communities' significance is based largely on their limited distribution (according to Peake). The EA has considered the significance of the vegetation as a preliminary listed EEC. The proposal has sought to avoid and minimise all impacts, however, unfortunately this major project will have some impact. The report acknowledges that the project will need to offset impacts that are unavoidable.

The proposal site has considerable opportunity for offset actions. The patchy nature of the woodland on site, areas that are currently naturally regenerating and the land tenure presents many opportunities to consolidate patches of vegetation, improve vegetation condition, and ultimately increase the area of native vegetation on site. This may not be possible with other remnants at other sites, but this site lends itself to such improvements.

Endangered Ecological Communities

The EA indicates that areas of Central Hunter Ironbark − Spotted Gum − Grey Box Forest and Central Hunter Grey Box − Ironbark Woodland will be cleared. These vegetation communities have been preliminarily determined as endangered ecological communities (EEC) listed under the Threatened Species Conservation Act 1995. It is the CMA's position that no loss of any EEC is acceptable and that these communities (if not in low condition) cannot be offset.

The EA considered the preliminary listing of Central Hunter Ironbark – Spotted Gum – Grey Box Forest and Central Hunter Grey Box – Ironbark Forest as an EEC. The assessment considered the loss of vegetation at the site and within the Central Hunter region following all attempts to avoid impacts to the community. The design and routes selected for roads, transmission lines, conveyors and the like were principally designed to avoid native vegetation and areas of ecological value, and orient them in cleared land or degraded vegetation. ELA used Peake (2006) data to calculate the percentage of each vegetation community lost, but could recalculate based on revised published data where available.

Under Part 3A, the assessment will show how impacts to EEC's and other ecological values have been avoided or minimised. Those impacts which cannot be avoided will be offset, with the aim of a net improvement in ecological value. The Planning Minister will consider whether this has been done satisfactorily. The Minister may consult with the CMA's, but the assessment report shows that the loss of vegetation on the site and in the region is small.

There is an inconsistency in the figures for areas of proposed clearing of the above vegetation communities for the gas-fired option (5.7 ha and 9.9 ha in Table 9, Appendix F, vs. 4.5 ha and 9.6 ha in other parts of the report). This should be clarified.

The area of vegetation impacted increased when the proposed gas pipeline route was revised to an improved route, however although more vegetation would be cleared in this scenario, the vegetation in these areas is of poorer condition. The correct clearing areas for the gas-fired option are 5.74 ha of Central Hunter Ironbark − Spotted Gum − Grey Box Forest and 9.93 ha of Central Hunter Grey Box − Ironbark Woodland.

Offsets

If clearing within over cleared landscapes and of EECs is approved, the CMA expects the proponent to demonstrate how environmental values are to be improved or maintained, with suitable offsets for proposed clearing being included in the Statement of Commitments (SOC). Appendix F outlines an offset strategy; however it has not been included in the draft SOC.

Further, the CMA strongly recommends that the offset strategy is consistent with DECCW's "Principles for the use of biodiversity offsets in NSW", including offsets being based on quantitative assessment of biodiversity gain / loss, pre-agreement with DECCW, ongoing management, and permanent legal security of areas,

The offsetting principles are set out in the Flora and Fauna Assessment in the Bayswater B EA and re-iterated above. It is considered more appropriate to define offsetting principals following finalisation of the detailed design phase of the project. As noted, any offsets would be undertaken in consultation with DECCW by the final proponent.

Cumulative Impact

The section addressing cumulative impact does not address the overall impact of all current and proposed projects on clearing of native vegetation. Several of the Major Projects listed involve clearing of the vegetation communities associated with this proposal, which are proposed for listing as endangered.

Given the preliminary determination of these communities and the level of threat they face, it is very important that the cumulative environmental impact be fully addressed.

As noted in the EA, the planned approach is to have the Flora and Fauna Assessment inform the detailed design process. Once then the detailed design (including the location of associated infrastructure) is determined, the Flora and Fauna Assessment (together with appropriate mitigation measures such as offsetting which were identified in the EA) can be reviewed and updated.

Soil / Salinity

The proposal is situated in area of highly erodible, low fertility, saline soils. A detailed Erosion, Sediment and Rehabilitation Plan will need to cover both onsite and catchment impacts in the short and long term. A detailed Salinity Investigation Program will need to be undertaken on the proposed site and the immediate catchment.

As discussed in Chapter 12 of the EA and detailed in the Statement of Commitments, a Soil and Water Management Plan will be prepared as part of the CEMP and OEMP for the project. The OEMP will include management of potential issues such as salinity, erosion and acidity. A Rehabilitation Management Plan will also be prepared as part of the CEMP.

The Department of Industry and Investment have an investigation program on Saline Recharge Groundwater Flow Systems within the proposed area. The proponent will need to contact The Department of Industry and Investment regarding the impact this proposal will have on this research program.

Noted. This would be undertaken at the Project Application stage once the design of the facility has been finalised.

Other

The executive summary indicates that consultation with the CMA was undertaken and Section 7.4.2 states a meeting was held with the CMA. The CMA has no record of consultation prior to this EA being put on public exhibition.

Telephone consultation was conducted between Mr John Neely of MacGen and the Chairman of the Hunter-Central CMA which included a briefing on the project and discussion of issues. The issues raised were particularly focussed on water use.

11.8 Dr John Kaye MLC (Greens MP)

There is no justification for new, expensive basload generation and would delay transition into a low carbon economy. Should transition to renewable energy.

In 2007 the Owen Inquiry identified the need for new baseload generation by 2013/14. In 2008 the authority responsible for projecting electricity growth in NSW TransGrid confirmed that the need still exists although the projected shortfall has moved by approximately 3 years. This project has utilised the TransGrid projections.

Refer to **Chapter 4** on Strategic Justification and Alternatives, **Section 10.1** on Policy Context Issues and 10.2 on Alternative Projections and Scenarios.

According to NASA climate scientist James Hansen, "coal is the single biggest threat to civilisation and all life on our planet". Electricity generation in NSW, which is dominated by coal, responsible for 37.4% of the state's greenhouse gas emissions. The increased emissions from these plants, whether coal or gas, would be unacceptable.

Objection noted. In addition, further discussion on GHG emissions and the global context is provided in **Section 6.1** of this report.

Privatisation of electricity generation would result in seeking increased power sales to boost profits which results in higher power bills as well as increased state emissions.

Concern noted. Private ownership will only occur if the electricity production costs are competitive in the context of the NEM.

Failure to make the transition to renewables puts thousands of jobs at risk in renewables sector.

Refer to **Section 10.1** of this report with respect to policy issues and renewables targets.

Owen Inquiry was criticised for not considering possibility of reducing overnight demand by replacing off-peak water heaters with high efficiency and solar units.

Refer to the response above and to **Section 10.2** of this report with respect to projections and scenarios. It should be noted that while Owen may have been the catalyst for the project, the planning and justification for the project has been formed on the basis of the TransGrid projections.

Report by NEMMCO (now AEMO), Statement of Opportunities, identified only relatively small shortfall in peak demand and that it could be met by better energy management alternatives.

From TransGrid's and AEMO's 2008 forecast it can be seen that insufficient energy supply is available from approximately 2016/17 which would result in a shortfall if action is not taken. By this time existing NSW coal fired generators will be operating at annual energy output levels not seen before and all generators are required to be in service. The risk of the shortfall occurring earlier cannot be ignored as a result of serious problems with even one generator. In its forecast TransGrid makes allowances for what it deems are the likely outcomes from demand side measures, energy efficiency initiatives and the impact of CPRS.

Refer to **Chapter 4** of this report with respect to Strategic Justification questions.

Under its Energy Reform Strategy the Government will offer a number of sites for sale to the private sector with the expectation that first successful bidder to commit to the developments of a large baseload power plant at any site will see the development of the other sites delayed. This would mean that the prospect of 4700 MW of new baseload power plant being installed in the same time frame is unlikely to arise.

Your reference to the impact of the phasing out of off peak hot water systems is noted. TransGrid makes no reference to this initiative in its 2008 forecast but does include for this initiative in its 2009 forecast. At the time this latter forecast was prepared TransGrid factored in the then expected impact of the Global Financial Crisis. MacGen considered during preparation of its EA it had become clear that Australia would avoid the worst of the GFC and that TransGrid's 2009 forecast was no longer applicable. This can be understood through a key indicator of interest rate rises. Interest rates are a factor taken into account by TransGrid as part of the projections. The 2009 projections anticipated interest decreases for a few years given the Global Financial Crisis. However, since that time there have been two interest rate rises. This has been taken as indicative that the GFC effects are lessening and it is anticipated that the TransGrid projections on this basis are an under-prediction.

The UTS report discredits the Owen Report

The UTS Report is regarded as one of a number of scenario planning exercises currently in circulation. The authorities that have the mandate to forecast energy growth in NSW are TransGrid and AEMO while the latter has the mandate to ensure there is sufficient supply to meet energy requirements.

Refer to **Section 10.2** of this report with respect to projections and scenarios.

AEMO projections revised downwards and therefore there is no need for a massive fossil fuel generator building program

Refer to **Chapter 4** of this report in relation to Strategic Justification and **Section 10.2** of this report with respect to projections and scenarios**.**

Future lies with renewables, energy efficiency, the use of waste heat from industrial plants and demand management

Refer to **Chapter 4** of this report regarding Alternatives and **Section 10.1** with respect to policy.

Replacing dependence on coal fired generators with demand side management and low emissions distributed sources will slash network costs. Savings from phasing out coal generation and reducing investment in the distribution network will more than outweigh the increased costs of investing in renewables

Interconnected power systems employed universally rely on large central power stations and load centres all interconnected by substantial transmission and distribution links. This provides diversity of supply and transmission and allows minimal reserve generating plant and transmission capacity margins. Distributed generating sources are generally seen in the context of discrete generator and load sets and higher reserve margins must be installed for the same level of reliability.

Specific capital cost ($/kW) are significantly higher for small distributed systems compared to the economies of scale captured with the large interconnected power systems.

At this time renewable generating technologies are limited by the absence of viable energy storage systems (except for solar thermal) for when the renewable energy is not available.

Approval of the power station will result in loss of thousands of jobs in the renewables sector

This project does not negate the need of the State and Federal governments to meet their mandatory obligations.

The two new power stations will produce around 22.6 million tonnes of CO_2 each year. The objective of returning to year 2000 levels by 2025 will be unachievable.

As mentioned above 4700MW of baseload fossil fuelled plant is not expected to be installed in the same time frame. As discussed in **Section 10.1** of this report, the approval of this project does not negate the State or Commonwealth's mandatory obligations.

CO_2 emissions in the EA are understated as they assume a 80% capacity.

The capacity factor used in the EA is 92%.

NSW Premier has signalled that the plants will be gas fired, there has been no change to the project applications to reflect this position.

The eventual project proponent will select the preferred technology which will be subject to Project Approval. As such, the EA was required to assess the potential impacts of both technology options.

Even if gas is used, the State's CO_2 emissions will increase by 7% and the EAs fail to adequately address the environmental impacts of the emissions from these projects

As noted in **Chapter 6** of this report, based on DECCW's State figures from 2005 (the latest available) the gas fired option would increase the State's GHG emissions by less than 4% (assuming operation at full capacity for the full year). In Section 10 of the Bayswater B EA the GHG emissions were quantified and reported on the measures that were investigated to minimise emissions were reported. The impact of these GHG emissions on the environment is a subject we are not qualified to determine.

Emissions free technologies have not been considered

As indicated in the EA NSW is regarded as having inferior wind resources. The deployment of wind generation in many other countries is greater than in NSW. This is generally the result of a number of factors which include:

- Different geographic (e.g. in the roaring forties) and topographic features which give rise to much superior wind resources.
- A national desire for energy independence with cost being a secondary consideration.
- Direct government subsidies availability
- Differing electricity market operating parameters.

Australia is witnessing an increasing deployment of wind generators generally along the southern coast line; however the contribution of wind generation in NSW is projected to be limited as demonstrated in **Figure 2**.

For Bayswater B, the conceptual design is based on the selection of proven, commercially available technologies and manufacturers' standard reference design power plants in order to minimise capital cost and plant performance risks. The inclusion of biomass co-firing would increase the capital costs of the plant. It would involve the use of non standard technology and undoubtedly degrade the value of plant suppliers' performance guarantees.

Biomass firing was employed by MacGen in the past. The quantity of saw mill residue and vegetable oil co fired at Bayswater and Liddell in the past was less than 1% by mass due to limited supplies of biomass and plant performance issues. Furthermore biomass had to be sourced from distances of up to 300 km incurring prohibitive transport costs. An additional concern was the increasing use of diesel fuel consumed with associated GHG emissions for the transport of the biomass.

MacGen does not currently fire biomass at Bayswater and Liddell due to the impact the low energy fuel has on plant output and the high cost of transport and handling makes it uneconomic.

The lack of available locally sourced biomass and its high cost make biomass co-firing not viable for Bayswater B. It is understood that the future availability of sawmill waste is threatened as a result of the declining native timber hardwood industry. The specific energies of softwoods are significantly lower resulting in little if any useful heat release.

The very high costs of photovoltaic generation and the need for backup power supplies mitigates against this technology for the time being.

Refer also to **Chapter 4** of this report with reference to Alternatives.

Proposals should be referred under the Environment Protection and Biodiversity Conservation Act 1999

A referral for the proposed Bayswater B project has been submitted to the Commonwealth Department of the Environment, Water, Heritage and the Arts and is currently pending determination.

Carbon capture and storage not viable

There is uncertainty in both the timing and cost of CCS. Given the considerable global effort to develop this technology MacGen is confident that a deployable technology will emerge. The requirements of DoP and DECCW reflect this in the requirement for a regular review and implementation assessment of CCS options. It has long been recognised that CCS will not be viable for some time. However, in looking at a fossil fuel technology option, CCS is the only (albeit long term) means of assessing the reduction or removal of emissions.

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12.0 Local Government

12.1 Muswellbrook Shire Council

Muswellbrook Shire Council in its submission requested amendments to the Statement of Commitments (SOC) contained in the EA. The suggested changes or additions are identified below.

That the proponent become a signatory to the Upper Hunter Air Quality Monitoring Network.

Agreed. This would be addressed by the Proponent in a Project Application.

That the Air Quality Assessment be reviewed in the design phase such assessment to include the effects of hydrogen fluoride emissions on viticulture, agriculture and habitat areas for the coal powered option.

Agreed.

That the CEMP and OEMP noted in the SOCs should conform to International Standards ISO:14001

Agreed

The Proponent will undertake further detailed environmental assessment on a range of issues as identified in this SoC and for the purposes of such assessment the Proponent shall undertake the same consultations and the same exhibitions that the Proponent would have been required to undertake had those assessments been available as part of this application including (without limitation) consultation with Muswellbrook Shire Council and Singleton Shire Council.

The Proponent will be required by the EP&A Act to fulfil its obligations in respect of consultation with the community and with Muswellbrook and Singleton Shire Councils as part of a Project Application. These obligations would include the assessments as detailed in the SOC.

Where the Proponent is required to prepare or implement a plan or report, the Proponent shall (in addition to any other consultations or exhibitions it may undertake) consult with Muswellbrook Shire Council and Singleton Shire Council and exhibit the plan within the shires of Muswellbrook and Singleton.

Any plans required as a condition of a Concept Approval, or as a condition of a Project Approval would be required to comply with the requirements of those conditions. Historically, this has required that such plans are submitted to the Director General for sign off. Upon completion and sign off, MacGen has placed such plans on its website where relevant and appropriate.

The Proponent will ensure that the final design locations of linear infrastructure associated with the Project (roads, conveyors, pipelines) are selected generally in line with the considerations including allowing for future road widening of the New England Highway in the event any such infrastructure should traverse that highway.

Final design details will be determined by the project proponent. The design of linear infrastructure will be such as to not preclude or inhibit potential future reasonable widening of the New England Highway by an agency or other party.

The Air Quality Assessment will be reviewed during the detailed design phase and such assessment should include (without limitation) an assessment of $PM_{2.5}$ dust generation against any applicable health standard or, in the absence of such standard, any prevailing scientific opinion with respect to the appropriate levels of exposure, or the reasons, if any, for not providing such assessment.

There are no air quality criteria for $PM_{2.5}$ in the Approved Methods document. DECCW relies upon the National Environmental Protection Measure (NEPM) process for setting limits and, to date, the NEPM has not set air quality standards for $PM_{2.5}$. The NEPM does include Advisory Reporting Standards for $PM_{2.5}$. The purpose of these Advisory Reporting Standards is to provide a basis for data collection and reporting.

The NEPM standard for 24-hour average PM_{10} has been adopted by DECCW in its Approved Methods. The NEPM standard for PM_{10} has been developed from a literature review of international standards for particulates in urban areas and the health effects of these. The WHO found that, considering the components of PM10 and $PM_{2.5}$ likely to be in modern urban areas, that the limit of 50 µg/m³ for PM_{10} should minimise health effects of urban particulate matter. It is considered that the PM_{10} air quality criteria is also effective in minimising the potential for impacts of $PM_{2.5}$.

The assessment conducted by Katestone Environmental to predict ground-level concentrations of PM10 showed that 24-hour and annual average concentrations of PM10 would be low and only a small proportion of the air quality criteria under worst-case conditions.

The component of PM_{10} that is $PM_{2.5}$ is likely to be of the order of 60%. Consequently, the maximum increment due to Bayswater B Power Station (coal) in isolation would be around 1.1 µg/m³ as a 24-hour average and about 0.03 µg/m³ as an annual average. These predicted levels are 4.4% and 0.4% of the Advisory Reporting Standards contained in the NEPM.

Further, in 2005 a comprehensive assessment of $PM_{2.5}$ in the near and far fields was undertaken by Malfroy Environmental Strategies, CSIRO and Macquarie University in "An Assessment of the Contribution of Coal-Fired Power Station Emissions to Atmospheric Particle Concentrations in NSW, March 2005."

The study was commissioned by the three NSW State-owned coal fired electricity generators to assess the impact arising from fine particles in the three generating regions. This included particles either directly emitted during electricity generation, or which formed in the atmosphere subsequent to emission.

The key findings of the study for the Hunter Valley region were:

- The frequency distributions of ground-level concentrations associated with power station emissions suggests that the near-field occurrence of elevated particle concentrations is likely to be infrequent.
- Predicted peak 24 hour average $PM_{2.5}$ concentrations were 36% of the NEPM Advisory Reporting Standard of 25µg m-3.
- Predicted annual average $PM_{2.5}$ concentrations were 1.5µg m-3 which is equivalent to 18% of the relevant NEPM Advisory Reporting Standard.
- The results from the modelling of "worst-case" days suggest that the power station contribution to urban fine particle concentrations is small. Further, an analysis of one year worth of modelling results indicates that these small power station contributions to urban fine particle concentrations are likely to be infrequent.

The Air Quality Assessment undertaken for the Project Application will be done in accordance with future Director General's Environmental Assessment Requirements issued for the Project Application, and in consultation with DECCW.

The Proponent will undertake an assessment of the impact of the purchase of any additional water allocations (if any) in the detailed design phase and in particular the impact on other potential holders of such allocations including the mining and agricultural industries.

In the event that the proponent requires additional water rights they will be acquired through the water market under the provisions of the Water Sharing Plan for the Hunter Regulated River Water Source. Refer also to **Chapter 7** of this report.

The Proponent <u>will</u> undertake further testing and design modifications for sodic and dispersible soils, salinity, gypsum requirement, structural hazards and acidity prior to construction.

Agreed.

The Proponent will prepare a Rehabilitation Management Plan [RMP] as part of the CEMP and OEMP inclusive (without limitation) of:

(a) construction rehabilitation; and

(b) operational rehabilitation;

(c) post operational rehabilitation.

Agreed to points a) and c). There would be no operational rehabilitation required.

The Proponent will undertake pre-construction surveys during an appropriate season for Green and Golden Bell Frog (Litoria aurea),Small Snake Orchid (Diuris pedunculata) and Pine Donkey Orchid (D. tricolour) and such further species as the Proponent in its surveys should identify.

Agreed.

The proponent will ensure that the location of the construction workers camp is considered to ensure that workforce requirements and integration with local and regional planning are carefully managed and in respect of which consultation with Muswellbrook Shire Council is undertaken.

Section 18.4 of the EA recommends consultation with both affected councils as follows:

Once potential impacts are confirmed, the proponent for the development should consult with Muswellbrook and Singleton Councils. This would allow the basis for management of the potential impacts, longer term support for the Councils to manage effects and to allow Councils to confirm within their long term or strategic planning, additional resources that may be needed over time

The Proponent will ensure that the CEMP includes: Rehabilitation plan that includes the process for making good damage caused during the construction period including (without limitation) any road of a roads authority.

The Proponent will ensure that damage caused as a direct result of the construction activity will be rectified.

The Construction Traffic Management Plan would undertake further traffic analysis once staff accommodation is located, information is available on materials to be transported, and likely vehicle types and vehicle routes are identified.

The Proponent shall make an assessment of its workforce requirements and prepare an apprenticeship and traineeship plan setting out (amongst other things) adequate recurrent provision for the training of suitably qualified and skilled staff.

At this concept stage of planning it is difficult to state what the likely workplace arrangements may be or indeed the commitment the proponent may have to apprenticeship or trainee programs. However this recommended commitment is considered valid and is included in the revised SoC.

The Proponent will, in preparing its Traffic Management Plan, obtain data on the cumulative impact of the development on the local road network for the whole of the life of the development. Such assessment modelled over time so as to permit an assessment of the intense (abnormal) periodic uses that may require special provisions, such as pre and post dilapidation surveys typically associated with concentrated construction activities and including:

a) equivalent Standards Axle loadings and how much the total operation contributes to the loading on the roads over the life cycle of the assets;

b) a breakdown of heavy vehicles from a single axle rigid truck to a B-double or over-dimensioned vehicle).

A Traffic Management Plan will be included in both the CEMP and OEMP for the proposal.

Assessing the cumulative impact of the development on the local road network for the whole of the life of the development is not warranted as data could be potentially out of date even after a period of 12 months, given the extent of projects occurring in the area.

Traffic impact on the local road network is based on both non-development related traffic and development generated traffic. The impact on the local road network would therefore vary with changes to non-development related traffic (including adjacent developments) and forecasting the fluctuations of non-development related traffic over the whole life of the development is not practical or feasible.

The heavy vehicle breakdown provided in the EA is an estimate and may change over the course of the construction phase. The detailed Construction Traffic Management Plan to be prepared for the project will plan for worse-case-scenarios.

12.2 Dissenting Members of Muswellbrook Shire Council Environment Committee

The Dissenting Members of the Muswellbrook Shire Council Environment Committee submitted the following comments.

1. Request for a similar analysis of Solar Thermal Storage (or other sustainable low emission technology) as well as current fossil fuel options.

Refer to **Chapter 4** with respect to Alternatives.

2. Project needs analysis should also address impact on demand management, generation, transmission and supply efficiency improvement and user metering technology

The extent to which demand side management, generation, transmission and supply efficiency improvement and user metering control technology might be effective has been dealt with by TransGrid and AEMO in their forecasts as this is their area of expertise and is independent of this project. The justification for the proposed Bayswater B project has been based on their projections and therefore these matters form part of the project need analysis.

3. Request for specific information on the disposal of fly ash, the GHG emissions related to the disposal of fly ash and assessment related to limestone extraction.

As noted in the EA, it is not currently known if the chosen technology will be coal fired. In addition, the current location of ash disposal (if coal is chosen) is not yet known. As such, if and when coal becomes the preferred option, and a location is nominated and confirmed, a detailed assessment of the conditioned ash disposal would be undertaken and presented in the Project Application.

It should be noted however that the EA stated that the fly ash would be conditioned and transported by conveyor with the bottom ash transported by covered truck. Indicative water management was also provided in the EA based on current activities, however this would all be assessed in the specific context of the confirmed location, if coal is chosen as the technology.

The GHG assessment included ash disposal. However, this would also be reviewed for a Project Application if coal is the chosen technology.

Flue gas desulphurisation, which requires the use of limestone, does not form part of this project and therefore limestone is not required for this project.

4. The Environment Committee considers that Pukara Olive Grove and Roxburgh Vineyard would potentially be adversely impacted by the proposal and requests further information including an analysis of the impacts at those and other receivers [populations, agriculture in general, horticulture, equine and other industries within the Shire and beyond, wherever potentially adversely impacted] including how are they impacted by fluoride and other emissions and depositions identified in the EA, the National Pollution Index and as recorded by ANSTO monitor (Muswellbrook ASP40).

Refer to **Chapter 5** of this report, in particular **Section 5.5** regarding fluoride impacts.

5. The Environment Committee is deeply concerned at the lack of easily comprehensible detail on the quantum (power generation and coal extraction) of GHG, dust emissions and cumulative metalloid, fluoride and acidic deposition etc throughout the Shire in quantities indicated by the National Pollution Inventory and ANSTO monitoring and requests that the Bayswater B EA be reviewed to incorporate the information contained in the National Pollution Inventory and collated by the ANSTO monitor (Muswellbrook ASP40) and from monitoring conducted by other local extractive industries, within the Shire and beyond, wherever potentially adversely impacted, focussing on the impact to human and ecological health.

The Air Quality Impact Assessment has relied upon ambient air quality monitoring conducted in the region and has made predictions of ground-level concentrations of air pollutants and assessed these against the DECCW's air quality criteria. These air quality criteria have been determined based on an air pollutants potential to affect human health, amenity or ecological health.

Cumulative impacts of the Bayswater B Power Station operating in conjunction with existing activities was assessed in accordance with the DECCW's Approved Methods. For some air pollutants, due to the lack of available background information, cumulative assessment could not be completed. However, for these air pollutants the contribution of the Bayswater B Power Station was predicted to be very low.

Monitoring data collected by ANSTO was not evaluated in the air quality assessment. MacGen has collected an extensive dataset of measurements of the critical air pollutants associated with coal-fired power generation over 15 years. This dataset was used extensively in the air quality study because of its quality, temporal and spatial coverage.

6. Need to include the short and long term impact of cumulative developments on the social health and profile of the community

The EA found that the bulk of potential adverse impacts on the local region would be during construction of the Project and would include pressures on local infrastructure and services. Provided that the social and economic assessment is reviewed by the proponent at the detailed design phase and that a CEMP is prepared detailing appropriate mitigation measures, the social and economic assessment carried out as part of the EA found that all social and economic impacts can be managed. Specific management measures would include proper planning and management of the construction workers camp, traffic and rehabilitation. Importantly, stakeholder engagement would include further consultation with the Muswellbrook and Singleton Councils to manage impacts on each LGA.

The cumulative impacts of the proposal have been considered with respect to impacts associated with the proposed development, in addition to impacts associated with other projects in the region. Section 23 of the EA noted that the cumulative impact of the combined developments in the region has the potential to exacerbate the use of infrastructure and service resources within Muswellbrook and Singleton, and may impact on accommodation availability and price in the locality, as well as community service provision and access to childcare services.

As discussed in Section 23 of the EA, the cumulative impacts of the proposed Bayswater B Project and that of the combined regional developments would be addressed through mitigations in the detailed design stage of the project. This may include measures to ensure adequate accommodation and infrastructure resources are available for the proposal.

A review of the EA during the detailed design stage and an assessment of the construction logistics, in particular socio-economic considerations, traffic and transport and cumulative impacts with other developments, would be undertaken by the proponent to identify additional constraints and develop detailed mitigation measures for the development. This review would analyse current and proposed project activity with the aim of updating / preparing management plans to support the proposed Bayswater B project construction logistics.

Given the extent of activity in the area, this is undoubtedly a key issue. However, until the technology has been chosen, and a detailed design and construction logistics assessment is undertaken, further detailed studies cannot be undertaken.

As noted above, the EA, including in the Statement of Commitments, provided for a detailed review of the social impact assessment during the detailed design phase and this assessment would be undertaken in consultation with relevant local stakeholders. It would also be presented in a Project Application and exhibited for public comment.

7. The Environment Committee requests that the Bayswater B EA include in its costing an associated expansion of the New England Highway, Branxton to Muswellbrook , to a dual, segregated, 'four' lane highway with associated improvements, consequent to the Bayswater B EA identifying the Level of Service of the New England Highway between Singleton and Muswellbrook as currently operating at Level of Service D/E.

An upgrade of the New England Highway as noted above would not form part of this project, and is not related to this project and so would not be included within a project costing.

8. The Environment Committee recommends that the Bayswater B EA include consideration that Thomas Mitchell Drive be re-classified a Rural Arterial route and costings of necessary improvement and maintenance, funded by Council, RTA and industry be included in the Bayswater B Environmental Assessment.

At this stage, Thomas Mitchell Drive has not been identified for use by the project and so has not been included within the assessment. At this stage, since it is not included within the project nor is related to it, no costing has or will be included. Section 94A contributions would be negotiated separately.

9. The Environment Committee requests that the Bayswater B EA include an assessment of the provision of mandated construction employee transportation by bus and/or rail including costing of infrastructure additions (such as a generation area transportation centre) with (shift change related) bus or rail services to Muswellbrook-Scone, Branxton-Rutherford and associated secure, long stay, parking facilities at Singleton, Scone and Muswellbrook .

The need for parking, public transport and other forms of transportation would be reviewed during the detailed design phase as noted above, in specific relation to the needs and impacts of the project.

10. On the basis of the Coal and Gas Option analysis provided in the EA and the limited input provided for by the Project classification as Critical Infrastructure the Environmental Committee recommends any Bayswater B electricity generation facility use the Combined Cycle Gas Turbine (CCGT) process.

Noted.

11. The Environmental Committee is opposed to any Coal Combustion process without the inclusion, from formation, of a fully integrated and operational CCS system.

Refer **Chapter 6** regarding the unviability of implementing a coal fired system with CCS immediately.

12.3 Singleton Shire Council

The Singleton Shire Council submitted the following comments.

Submissions time frame is fairly short given the complexity of material provided in the EA

As discussed in **Section 10.4** of this submissions report, the submissions period was set in accordance with statutory requirements and advertising of the exhibition was carried out according to due process.

No reference to health impacts in the AQIA or the EA as a Health Risk Assessment

Health risk was not required in the EARs but was implicit within the Air Quality Assessment.

Refer **Section 5.9** of this report in relation to public health.

No specific details regarding location of construction workers camp. Need to resolve size and location, provision of adequate infrastructure, agreements with SSC and availability of family accommodation.

Section 18.4 of the EA stated that

- Detailed design and construction logistics reports would be prepared based on the information provided in this EA in order to plan appropriately to avoid or minimise potential negative effects;
- The location of the construction workers camp is to be considered with due care and attention in order that workforce requirements are carefully managed, negative impacts to the local community minimised and economic benefits maximised.
- A review and update of the social and economic assessment in the EA is to be carried out by the proponent on the basis of the finalised detailed design and construction logistics report to confirm the extent of potential effects.
- Consultation is to occur between the proponent and Muswellbrook and Singleton Councils to allow for management of the potential impacts and to ensure that any proposals fit with the planning framework for the local areas

The traffic assessment concludes there will be an increase in average daily traffic flow along the New England highway of 3.2% for the coal fuelled option and 2.0% for the gas fuelled option. However, this would appear to be based on modelling using 2004 data. Singleton has some emerging traffic planning issues and in particular is concerned an increase in traffic would further exacerbate the capacity issues at the Bridgman Road – New England highway intersection as well as contribute to further traffic congestion on the highway through the Singleton urban area.

The average daily traffic flows are forecast for year 2013. Past historic traffic volumes show that there is no trend in traffic volume growth. Furthermore, it is expected that the proportion of traffic generated by the development would be limited to the immediate surrounding areas of the power station, e.g. traffic movements between the power station and mines in the vicinity.

The CEMP for the proposal would include measures to manage the traffic movements on the road network, timing of movements and would ensure efficient route planning. This may also include redistribution of truck movements to outside peak periods and to not coincide with peak school traffic.

The CEMP would not address existing capacity issues at Bridgman Road / New England Highway as this is an existing regional traffic issue. Rather it would manage the traffic movements outside of peak periods where the intersection operates beyond capacity.

Should wet cooling be proposed, assessment of impacts on local water use will be required due to limited water availability.

Agreed.

No disposal site for fly ash has been identified. Further assessment would be needed.

Agreed. If coal is chosen as the preferred option and a disposal location is identified, a Project Application would need to undertake a detailed environmental assessment to identify and then avoid, mitigate and manage any potential effects.

12.4 City of Sydney

Submission	Response
National, State and Local GHG targets would be adversely affected	Refer **Chapter 6** with reference to GHG emissions
Future carbon prices mean there is a high likelihood of increased costs being passed onto consumers	Future carbon costs will be ultimately borne by all electricity consumers because the real cost of emitting carbon is included in the price of electricity sold. Electricity consumers then are expected to respond and adjust their consumption accordingly. These influences on electricity consumption have been included in the TransGrid projections
Reliance on centralised energy (and requirement to upgrade and augment transmission networks) will increase costs to consumers and funding could be allocated to decentralised low-carbon energy projects and demand management	A centralised power generating plant policy approach has been adopted world wide as a way of minimising transmission system costs and gaining maximum main plant economy of scale advantages. However, power generation plants installed local to heating and cooling loads save on transmission costs but incur additional costs for hot and chilled water pipe work as well as an economy of scale penalty because of smaller main plant capacities and increased plant margins.
Low carbon energy and demand management should be investigated	Refer to **Section 10.1** with reference to policy context of this project
Efficiency of existing plant should be improved rather than build new	The existing NSW coal fired generators are operating at their design efficiencies. To

	materially improve their efficiencies and outputs would require adopting higher steam conditions and larger plant components which would necessitate the demolition and replacement of the main plant components at a specific cost ($/kw of installed plant or recovered output) greater than Bayswater B
City of Sydney categorically objects to new coal fired electricity generation.	Objection noted.
Unsustainable use of water	Refer **Chapter 7** regarding water
Incompatibility with decentralised energy generation	Studies continue to show that renewable electricity generation plants cannot compete with conventional generating plant without considerable government subsidy. The Owen Inquiry to which we are in principle responding identified the need for new baseload power plant. Baseload plant is defined to be that class of generating plant which operates continuously 24hs a day through all seasons producing electricity at an affordable price.
NSW government should foster options for innovation in electricity generation and demand management necessary to achieve the most economically and environmentally friendly outcome. Currently available coal fired electricity generation technology does not meet these criteria and should not be considered as a viable option for the Concept Plan Application – New Baseload Power Station (Bayswater B)	Recommendation noted.
CCS not commercially available. Having a clause for undeveloped technology is invalid in purpose	Refer **Chapter 6** regarding CCS
NSW government should take a leadership position, in line with its GHG targets, and announce that no new coal fired electricity generation plant will be approved until CCS is demonstrated and commercially viable	Recommendation noted.
Major transmission network augmentation required	A centralised power generating plant policy approach has been adopted world wide as a way of minimising transmission system costs and gaining maximum main plant economy of scale advantages. However, power generation plants installed local to heating and cooling loads save on transmission costs but incur additional costs for hot and chilled water pipe work as well as an economy of scale penalty because of smaller main plant capacities and increased plant margins.
EA does not include a capital investment cost. Cost of estimated options should be clearly communicated.	All project related options were assessed on the same financial basis as the main proposal in assessing their costs and benefits. The coal and gas fired options demonstrated the best potential viability
True costs of local low carbon energy and demand management is less that centralised coal fired generation with the inclusion of	The CPRS prices are currently unknown.

carbon pricing and deferred network investment	
Cogeneration and trigeneration used widely overseas	The deployment of cogeneration and trigeneration technology would yield energy savings. If the City of Sydney were to successfully deploy this technology throughout its local government area it would lead to a potential deferment of the proposed Bayswater B project by about 1 year.
NSW Government should re-assess options for new power since Owen report was written before there was a national commitment to carbon pricing and within a substantially different economic climate	Owen did in fact include the impact of carbon pricing in his 2007 Inquiry based on the level of information available at the time. Subsequent TransGrid electricity load growth projections (MacGens' source of information) have also included for the impact of a future CPRS.

12.5 Marrickville Council

Submission	**Response**
The two power stations will emit between 12.96 and 23.35 Mt of CO_2-e. This represents up to 14.78% of current NSW GHG emissions	Under its Energy Reform Strategy the Government plans to offer a number of sites for sale to the private sector with the expectation that first successful bidder to commit to the developments of a large baseload power plant at any site will see the development of the other sites delayed. This would mean that the prospect of more than one new baseload power plants being installed in the same time frame is unlikely to arise. Therefore GHG emissions of one power station only should be considered.
This is a significant increase in GHG, especially in light of NSW State Plan targets	Refer **Section 10.1** in relation to policy context.
Marrickville has adopted a position of opposing all new coal fired power stations on the grounds that it is incompatible with mitigating dangerous climate change.	Objection noted.

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13.0 Non-Government Organisations

This Chapter outlines individual submissions received from Non-Government Organisations and Interest Groups.

Where detailed responses are required, the submissions have been detailed in full. Where references to previous discussions or short responses are required, short summary tables of submission issues have been included.

13.1 AidWatch

Submission	Response
This proposal for a new fossil fuel-fired power plant will significantly increase GHG emissions.	Objection noted. Refer to **Chapter 6** on GHG.
This will have a direct negative impact on impoverished peoples across the world. Climate change is having direct and measurable impacts on anyone who relies for their livelihood on marginal lands. 99% of the people who will lose access to food and shelter as a result of climate change live in the world's poorest societies. The NSW Government Minister who decides to proceed with this new fossil-fuel power station, and their civil servants who implement the decision, will be doing so in full knowledge of the direct impacts of the resulting carbon emissions on the poorest people today, and of future generations tomorrow. A decision to open such a power plant, given our knowledge of its impacts, is tantamount to an international climate crime: it is pre-meditated and done in the full knowledge of its impacts, from livelihoods lost, to numbers of people displaced, to likely deaths.	Objection noted. Refer to **Section 5.9.3** on public health and climate change, and **Section 9.4** on social impacts related to climate change.
There is no justification for such criminal negligence: the proposed Bayswater B plant must be scrapped and replaced by a combination of renewable sources, energy efficiencies and reduced consumption.	Objection noted. Refer to **Chapter 4** on Strategic Justification and Alternatives and **Section 10.1** for policy context.
Instead of approving a program of new or expanded fossil-fuel fired power stations, the NSW Government should be decommissioning its existing coal-fired power stations. The failure to do so signals a profound dereliction of the duty of government to care for us, the people, and our future generations.	Objection noted.

13.2 Bellingen Environment Centre

Submission	Response
Coal fired power stations are the single greatest threat to the climate and therefore to life on earth.	Objection noted. Also refer to **Chapter 5** in relation to health and **Section 10.1** in relation to NSW and Federal policy contexts.
GHG must begin to fall immediately in NSW if we are to reduce the carbon in our atmosphere to a safe level. The atmospheric carbon levels are currently at 388 ppm and we urgently need to start reducing our impact, not increasing it.	Objection noted; also refer to **Section 10.1** on policy contexts.
New coal or gas fired power stations would drastically increase NSW GHG pollution by as much as 20%	Changes in NSW GHG emissions related to Bayswater B are calculated as being between 7.9% and 3.7% depending on the technology chosen. Refer **Chapter 6** on GHG
Request an immediate ban on new fossil fuel power stations in NSW	Objection noted
Request an urgent transition to renewable energy	Objection noted; also refer to **Section 10.1** for policy context.

13.3 Beyond Zero Emissions

Submission	Response
The NSW government is utterly out of step with the biggest challenge that this planet has to tackle globally, the challenge of reducing our carbon emissions to zero and then going further and drawing down carbon from the atmosphere.	Objection noted.
The idea of erecting another coal-fired power plant (the worst emitting power source of current power supplies) is completely irresponsible. It is increasing the size of the job that the future generations and our generation already has in reducing our carbon emissions. It is already agreed that reducing CO_2 emissions is necessary to give our planet a fighting chance in avoiding dangerous climate change - building another high emitter should be considered criminal neglect of your duties.	Objection noted.
We have the best solar renewable resource of any nation in the world - that is where we should be sourcing our power stations of the future. Our wind resource is also impressive, utilising geo-thermal and wave and tidal sources should also be our priority.	Refer **Chapter 4** on Alternatives
Stop pandering to the fossil fuel lobby and start caring for all of ours' future. Say NO to any new coal powered plant, simple.	Objection noted

13.4 Carbon Reduction Institute

Submission	Response
It is ridiculous to be considering new coal power plants in NSW.	Objection noted
These proposed power plants go against all action that has been taken by the NSW government to date to reduce greenhouse gas emissions of the state.	Objection noted. Also refer to **Section 10.1** on policy context.
Any new power stations built in NSW must be sustainable, and neither gas or coal are sustainable sources of energy.	Objection noted.
Stop this folly and put a moratorium on new coal plants in NSW.	Objection noted.
Renewable energy sources have been massively overlooked and underfunded in NSW.	Objection noted. Refer to **Chapter 4** on Alternatives.

13.5 Climate Action Newcastle

The claim that NSW needs more baseload power is dubious; as it is the high electricity demand during peak times that is causing supply problems in the network, not demand during the night ("baseload" time). Solar thermal plants with several hours of storage would be ideal for the energy demand patterns NSW will continue to show.

Refer to **Chapter 4** on Strategic Justification and Alternatives.

The concept plan application implies that there is a requirement that the technology choice for the power station be best practice in terms of greenhouse gas emissions. Coal and indeed natural gas, although a significant improvement on coal, are certainly not best practice when compared to the near zero emission technologies which are already available and can be used for baseload power.

In terms of zero or near zero air quality or GHG emissions, neither coal nor gas are best practice. As set out in the EA, given the need for baseload generation capacity, within the required timeframe and affordability criteria, the options for technologies which are "bankable" were limited to coal or gas. Within those two options, the choice of specific technological components and configurations (i.e. to achieve a better thermal efficiency) has been the aim of this project. The comparisons (in terms of thermal efficiency etc) are provided in the EA in Chapter 11 Greenhouse Gas Emissions.

The proposal describes the options and concludes that unfortunately all renewables are not baseload, and that only gas or coal could do the job. The concept plan application seems to have conveniently missed solar thermal as an option, while considering wind, photovoltaic (PV) and others. There are hundreds of megawatt solar thermal plants, with storage, currently operating throughout the world (including a few in Australia - the demonstration plant at the NSW Liddell power station has been very successful, but sadly not expanded). Some of these plants have been running for 30 years, by companies with proven track records in operating the technology of the plant and successfully managing the finances. These companies, including ex-patriot Australia Professor David Mills' company Ausra, are very capable of attracting sufficient investment.

Refer to **Chapter 4** of this report on Alternatives.

The relative "value for money" of coal fired power versus renewable technologies is determined on the basis that the power station already exists. However, now that the actual likely costs of building a coal fired powers station have been revealed (up to $5 billion for up to 2GW), the dollar figures for coal are a lot less attractive compared to renewables.

The idea that coal or gas is a low cost reliable source of energy for the next 20 years does not take into consideration the inevitable transition from a fossil fuel economy to a renewable energy economy, in NSW, Australia and the world; nor the role that domestic and international politics plays in this. With the unconstrained future movement of carbon prices and the damage caused by the emissions, it is clearly not the case that coal or gas is a low cost reliable source of energy for the next 20 years.

We also contend that a new coal fired power station is a further liability that NSW (and Australia) does not need and will certainly not contribute to the 'mix' of technologies we are frequently told is needed to supply our energy (usually with the intent to force inclusion of CCS and potentially nuclear energy with the obvious suite of renewables, as briefly described above).

Objection noted. Refer to **Chapter 4** on Alternative, **Chapter 6** on GHG and **Section 10.1** on the policy context.

Coal fired power stations are Australia's single biggest source of greenhouse pollution ? fuelling dangerous climate change. Bayswater B and the other recent and current coal fired power proposals would expand capacity in this state by 4,700 MW (36%). We urgently need to phase-out coal power stations, not build new ones.

Objection noted.

The proposed 4,700 MW expansion of coal-fired power would:

- **Be the single biggest expansion of coal-fired power in NSW in 30 years, despite the world's climate scientists telling us that we need to be rapidly reducing greenhouse pollution to avoid climate catastrophe.**
- **Increase annual NSW CO_2 emissions by 31 million tonnes (36%) to a monstrous 117 million tonnes of CO_2, annually. This equates to a 52% increase on NSW Electricity emissions.**
- **Allow the expansion of existing mines in NSW to meet the increase in coal demand from an already fossil fuel intensive and energy inefficient power supply.**
- **Effectively stifle investment in sustainable, renewable technologies and industry, and lock NSW into decades of rising greenhouse pollution.**
- **Exacerbate unacceptable environmental and human health issues in surrounding communities due to increased air and water pollution.**
- **Ensure regions such as the Hunter Valley remain firmly dependent on the destructive coal industry.**
- **The proposed expansion of coal-fired power stations must not be approved. We need to drastically reduce emissions and start phasing out coal now, or risk tipping the earth into dangerous, runaway climate change.**
- **The proposed expansion would increase NSW greenhouse gas emissions by one-third and effectively stifle investment in sustainable, renewable technologies and industries. It will exacerbate existing environmental and human health issues in the communities surrounding the power stations and the coal mines that feed them.**

The Bayswater B proposal is for 2000 MW of power generation. Under its Energy Reform Strategy the Government plans to offer a number of sites for sale to the private sector with the expectation that first successful bidder to commit to the development of a large baseload power plant at any site may see the development of the other sites delayed. This would mean that the prospect of more than one new baseload power plants being installed in the same time frame is unlikely to arise.

Refer to **Chapter 4** on Alternatives, **Section 10.1** on policy context and **Chapter 5** on health.

The concept plan application callously ignores the imperative of beginning a just transition to a low-carbon economy, and ensures that regions such as the Hunter Valley remain subservient to the coal industry.

The EA discusses the context of the project in relation to State and Federal mandatory targets for renewables. This is discussed further in **Section 10.1** of this report.

The Hunter Valley has a strong economy from coal mining activities and the national and international market for coal is such that should the Bayswater B project not go ahead using coal-fired technology, it is unlikely that the local mining industry in the Hunter Valley would decline, as the ongoing demand for exports would still exist.

NSW is well placed to develop renewable energy and energy efficiency jobs. We already have access to world class expertise in solar thermal and photovoltaic power, wind power, and energy efficiency. Cutting edge research in renewable energy technologies (not the fallacy of 'clean coal' / carbon capture and sequestration, which will not be commercially available for at least 20 years, even with rapid development) is underway at several universities throughout the state, and in CSIRO centres.

We strongly urge our elected parliamentarians in NSW to mitigate accelerating climate change and mandate that all new electricity generation in this state will be done using renewable energy technologies

Objection noted. Refer to **Chapter 4** regarding Alternatives, and **Section 10.1** on policy.

13.6 Climate Change Balmain-Rozelle

The basis of our objection is our opinion that expanding the use of carbon-based fossil fuels now is incompatible with the economic, health, environmental and social well-being of Australia on timescales greater than 30 years. This is based on the latest and most reliable scientific data and modelling available.

Objection noted.

Moreover, we wish to draw your attention to significant errors and omissions in the Environmental Assessment. We contend that correcting these leads to the following conclusions:

that a decision to build such a power station should be deferred for 12 months;

Noted. Refer to **Chapter 4** of this report with regards to Strategic Justification.

that a feasibility study into emulating and scaling up the Spanish Andasol project should be commenced forthwith;

Refer to **Chapter 4** of this report with respect to Alternatives

Concern the technology choice is being left to the tender stage since gas-fired generates half the emissions, there are no strong reasons for coal, there is no commitment to using CCS.

Concern noted. Refer **Chapter 6** of this report with respect to the non-viability of implementing CCS immediately. However, as outlined in the EA (including the Statement of Commitments which will become attached to the conditions of approval), there will be a regular review of CCS options and implementation planning.

Objection to statement in EA that "2008 projections represent a more realistic forecast given that the 2009 projections were heavily influenced by the GFC". – Unsupported by the data. The major difference between the growth curves is already present in the forecast for 2008/2009, a date at which the 2009 "projection" is surely the more reliable. Both sets of projections show an increase in demand of 4000 GWh of "native" generation between now and 2014/2015.

Refer to **Chapter 4** of this report regarding Strategic Justification and Alternatives.

Objection to statement in EA that "the power shortfall is projected to occur in 2016/17" – False. Current actual figures extrapolated on the basis of the 2008 projection show the shortfall occurring mid 2018. Given that the current economic climate is worse than when the 2008 projection was drawn up, the likely date is more like 2019.

Further, the calculation of the shortfall does not appear to take into account the government's target of 20% renewables by 2020. Given that the current level is only 6%, that represents an additional 1385MW, which pushes the shortfall out beyond 2020.

With the uncertainties in the economic outlook, the CPRS, CCS technology, and developments in renewables, delaying a commitment to fossil fuels for 12 months would appear prudent.

Renewable targets and the introduction of the CPRS, as well as demand side management, are factored in to the TransGrid projections. Irrespective of whether the shortfall occurs in 2013/14 as predicted by Professor Owen in his 2007 Inquiry or 2018, its actual timing will be determined by the future economic and population growth in NSW, which on current trends would appear to be recovering more quickly from the Global Financial Crisis than expected.

Given the time required for permitting, engineering, procuring and construction, is prudent to seek concept approval at this time.

Refer also to **Chapter 4** of this report regarding Strategic Justification and Alternatives.

Objection to statement in EA that "Solar and wind ... generate electricity in an inherently intermittent manner" – False. Solar thermal with molten salt storage has been demonstrated (Andasol) to provide baseload.

Refer to **Chapter 4** of this report regarding Strategic Justification and Alternatives.

Objection to statement in EA that "The comparative energy densities of both wind and solar have not been included as the values are low" – Energy densities in MJ/kg are only interesting because of the cost of bringing the fuel to the power station. This is irrelevant for solar and wind.

Table 3-1 of the EA seeks to illustrate that the lowest energy densities require the highest quantities of equipment (e.g. solar and wind plant) to achieve a useful outcome.

Objection to statement in EA that "[Solar] technology is not available for baseload generation, because commercially available storage technology would not be available within the next decade". – False. The Andasol project in Spain generates 100MW baseload today. Scaling up by a factor of 20 does not take 10 years. The new plant is for anticipated need from 2016, and it would not be necessary to have all 2000MW available by then.

Refer to **Chapter 4** of this report regarding Strategic Justification and Alternatives with specific reference to Andasol.

Sec 10.3.2, Table 10-8. An increase of 50% in national emissions from 2015 to 2044 is not an appropriate assumption.

The EARs required that the predicted emissions from Bayswater B be compared against total annual national emissions over the life of the project. To make this comparison, national emissions had to be extrapolated from most recent figures (2007) to estimate what they might be at commencement and completion of operations (in approximately 2015 and 2044, respectively). In order to estimate these figures, the most recent emissions growth rate of 1.6% p.a. (NGA, 2009) was applied to the 2007 annual emissions figure for the applicable number of years. Based upon this data, it was extrapolated that annual national emissions could be approximately 614.5 Mt CO_2-e p.a. in 2015 and 973.7 Mt CO_2-e p.a. in 2044.

As noted in the EA (Section 10.3.2), it is assumed that the national emissions growth rate of 1.6% is a worst case scenario, as this rate should reduce with the introduction of a Carbon Pollution Reduction Scheme (CPRS) and with other emissions reduction measures and technologies. Therefore it is assumed that it is appropriate to utilise 1.6% as a baseline National emissions growth rate in comparison against the base case calculations for Bayswater B, which do not incorporate emissions reductions from CPRS or CCS, etc.

Although this may not be an accurate figure, it utilises the most recent available actual emissions and known emissions growth rates to extrapolate possible national emissions figures. Calculating detailed predictions of changes in emissions growth rates over the next 35 years was outside the scope of the EA. As such, the calculations based on current figures were deemed appropriate.

The impact on flora, fauna, economy and society make no attempt to quantify the damage via climate change. Given the acknowledged risks from climate change, that is nothing short of negligent. While the percentage of worldwide emissions from one power station is minute, it affects the whole world.

The submission refers to the correlation between CO_2 emissions and species extinctions. The EA addressed the impact of the proposal on flora and fauna (including Commonwealth and State lists) but did not address the global correlation between CO_2 and species extinction which is considered outside the scope of the EA and was not a requirement of the Director General. It should also be noted that the findings of the EA showed that impacts from the Bayswater B project itself would not result in species extinctions.

As noted throughout the EA, there would be further surveys and assessments undertaken subsequent to Concept Approval on the basis of a detailed design (and a chosen technology). Only when the technology and the detailed design are confirmed can a meaningful detailed assessment be prepared and presented with respect to a Project Application. The EA undertaken for the Project Application would be guided by the Director Generals EARs and consultation with DECCW.

13.7 Electricity Week

For accurate GHG accounts the EA should account for ALL CO_2 produced, not just that sent out. E.g. the non-sent out load of the whole PCCC process including CO_2 compression should be accounted for, as should all loads and all production chains in terms CO_2-e/MWh, including transport of ash and of coal.

The GHG accounting referred to is included in the calculations presented in the EA, except for CCS which is not expected to be installed when the plant is commissioned. Data on auxiliary power consumption for CCS is not yet available.

At the time a CCS plant might be installed in the future the majority of CO_2 emitted by the main power plant and that caused by the CCS will be captured in the CCS.

The EA should report ALL anticipated pollution, regardless of stack height (rather than ground level data only) due to health risks associated with downwind particles from chimneys

The Air Quality Assessment considered two possible stack heights for the coal fired power station, namely, 250 m and 300 m. The outcome of the study was that the 300 m stack was preferable to minimise potential impacts on air quality. As a consequence, a full analysis of the 250 m stack height configuration was not conducted, because the coal-fired configuration of the Bayswater B Power Station would be constructed with a 300 m stack height.

The Air Quality Assessment in the EA was conducted in accordance with DECCW's approved methods which have been developed to consider air quality impacts at ground level.

Gas-fired gas-turbines produce a negligible quantity of fine particulate matter.

Refer **Chapter 5** of this report in relation to public health.

13.8 Environment Defenders Office

There is some question regarding the legality of granting concept plan approval for what, in effect, amounts to two totally different projects, namely a coal fired power station and a gas fired power station.

The EDO concedes that a concept plan *is to give a broad overview of a particular project by outlining what the project will entail* but argues that *it was not intended that a proponent could obtain concept approval for a range of two or more project options*.

There is only one proposed project, being a 2000 MW power station. The EA provided comprehensive proposal details and addressed the environmental impacts of both the coal fired and gas fired technology options. The advantage of seeking concept approval is that the detail pertaining to each option which may not be readily available at this stage, will be presented to the community once the proponent seeks project approval for the proposal. The proponent may seek to adopt a more efficient and cost effective technology and the concept approval would allow this once the environmental impacts of the revised technology are of the same order of magnitude or less than that currently proposed. Details of any technology to be used would be further assessed in the EA to accompany the project application.

At this stage it is unknown which technology the proponent who ultimately purchases the land and accompanying concept approval will choose and the approvals process followed will allow the proponent a level of flexibility to determine the most appropriate technology to suit.

The NSW government must consider the approval of the proposal for the Bayswater B power station in the light of available scientific evidence relating to climate change.

Noted.

The reduction of GHG emissions from electricity generators in NSW is of immediate concern. The projected shortfall in baseload energy supply described in the EA and used to justify the Bayswater B Power Station is of lesser concern. As discussed below it could be addressed without the construction of a new high GHG emissions baseload power station.

Refer **Chapter 4** regarding Strategic Justification and Alternatives.

Australian government has recognised the threat of climate change by ratifying the Kyoto Protocol and the development of a CPRS, renewable energy targets, regulatory controls on land clearing and other policies and measures.

Refer to **Section 10.1** of this report in relation to the policy context.

The EA has not adequately justified the need for the project. The EA essentially relies on the Owen Inquiry which has been criticised on a number of matters.

The EA utilised the Owen Inquiry as a basis but then reviewed the need on the basis of the TransGrid Annual Planning Reports (APRs). The 2008 projections were used rather than the 2009 projections since the 2009 projections had been lowered in the face of the Global Financial Crisis. The GFC is demonstrably less detrimental than originally believed and this is certain to have an impact on the projections. This is discussed further in **Section 4.1** of this report.

A number of experts have questioned the need for new baseload power** generation**.

Refer **Section 10.2** in relation to the projections and scenarios concerning baseload power plants.

The EA has not adequately shown how new GHG policies have been taken into account in demand and supply projections.

The TransGrid projections have been utilised for this EA and those projections take into account demand side measures and the CPRS.

The EA does not adequately address the alternatives to the project. There are three key that the NSW government can do which, in combination, could provide a viable alternative to the project.

- ***Increase energy efficiency***
- ***Remove off-peak hot water tariffs and phase out electric hot water systems***
- ***Increase energy supply from renewable sources.***

Refer to **Chapter 4** of this report in relation to Strategic Justification and Alternatives.

13.9 Greenpeace

Greenpeace noted that the proposal should be rejected on the grounds that 12 million tonnes of CO_2-e/annum of GHG emissions is unacceptable. This objection is noted and for clarity, the 12 million tonnes relates to the coal fired option. The manner in which this relates to national and State benchmarks is provided in **Chapter 6** of this report.

It was raised that not all alternatives have been assessed and that a combination of green energy and energy efficiency would provide a surplus of energy at 2019/2020. As noted in **Section 10.2** of this report, there are multiple projections and forecasts. This project has utilised the TransGrid projections as the authority calculations. Further discussion on the alternatives is also provided in **Chapter 4** of this report.

The submission raises the concern that climate change is an extremely serious and urgent problem. The context of Australia's global contribution is discussed in **Section 6.1** of this report. It is also discussed in **Section 10.1** of this report how Australia's global, national and State commitments still need to be met and that the Bayswater B project would be undertaken within such a regulatory framework. The concern and objection are noted however.

The submission highlights the need to turn away from fossil fuel power and only support zero-emission alternatives. This is discussed further in **Chapter 4** but it is noted again that with the national and State initiatives and renewable energy targets (which still need to be met) the Bayswater B project will not negate the obligations of the Federal or State governments in supporting research and development into renewables.

The submission raises concerns with CCS which is discussed further in **Chapter 6** of this report. However, it notes that given the current state of knowledge regarding CCS, that the project should be assessed on the basis of currently known technology only. This recommendation is noted.

The submission re-iterates that best available technology should be regarded as renewables and disputes that renewables are not yet in a position to provide baseload power generation. This is discussed further in **Chapter 4** of this report.

13.10 Hunter Environment Lobby Inc.

Objection raised to the project because it is a response to the inaccurate conclusions of the Owen Inquiry

The Owen Inquiry was the catalyst for many discussions regarding the need for baseload power generation. However, this project has utilised the projections of TransGrid which take into account demand side measures and the CPRS.

Development of solar thermal generation has shown that this renewable energy source is capable of supplying baseload power needs.

This is discussed in **Chapter 4** of this report.

Locking NSW into increased GHG emissions will cause the State to become uncompetitive once new international carbon agreements are met.

Objection noted.

1. The proposed increase in annual GHG emissions are totally unacceptable.

This is discussed further in **Chapter 6** of this report.

2. There is no allowance in the concept plan for either the coal or gas plant to be ready for carbon capture and storage.

Section 10.4.4 of the EA demonstrates the commitment that the Bayswater B Power Station would be designed to be carbon capture ready. The proposal includes provision of sufficient space to install a carbon capture and compression plant (in the order of 4 ha), plant design including consideration for future retrofitting of PCCC and identification of suitable carbon storage sites (Section 1.4.3 of EA). In addition a review process would be undertaken every two years assessing technologies available for carbon capture, transport and storage against six criteria set out in Section 10.4.4 of the EA including operational and commercial viability and environmental risk. Should the technology prove rigorous against all criteria, a CCS Implementation plan would be prepared in consultation with the relevant regulatory authority.

3. The addition to the nation GHG emissions of an extra 2.02% from coal or 0.96% from gas is unacceptable and will not allow Australia to reach planned emission targets by 2050.

The policy context of the project and the need to meet mandatory targets is discussed in **Section 10.1** of this report.

4. The socio – economic analysis does not consider the economic and social costs of increased greenhouse gas emissions leading to climate change. This includes the economic and social costs of increased severe weather events such as more severe droughts, bushfires and storms. Severe weather events are already costing the community a significant increase in insurance premiums and property loss. A clear analysis of these costs at the local, regional and State level needs to be undertaken in the consideration of the proposed greenhouse gas emission increases.

The submission refers to the economic and social costs of increased severe weather events such as more severe droughts, bushfires and storms resulting in increased insurance premiums and property loss. It also states that a clear analysis of these costs should be undertaken at the local, regional and State level when considering proposed GHG increases.

It is widely understood that climate change is having an effect on our weather patterns and that GHG are a contributing factor in climate change. However the magnitude to which increased GHG emissions as a result of either option proposed, contributes to overall climate change is outside the scope of this EA. Rather the EA addressed options to offset GHG emissions either by investing in carbon offset projects or by directly augmenting with renewable energy. As stated in Section 10.4.2 of the EA review of these options would need to be undertaken by the Proponent for the Project Application who would be the responsible party for the detailed design, construction and operation of the facility. This would be undertaken subsequent to the concept approval process.

The review of these options would need to be balanced with commercial considerations and the potential for a formal CPRS which may be introduced in the near future.

The Proponent would also ensure that Bayswater B would be capable of implementing CCS when this technology becomes feasible. An ongoing review process proposed would keep abreast of CCS technologies.

5. The prediction that without the proposal NSW would have a baseload electricity shortfall by 2015/16 is totally incorrect. This proposal has not considered the opportunity of constructing a 1000MW solar thermal power station on Bayswater property. It does not consider the impact of the Federal government 20% renewable energy target on baseload demand. Nor does it consider management of demand for baseload power or energy use efficiency measures.

The predictions have been taken from the TransGrid projections.

Solar thermal is discussed in **Chapter 4** of this report. This discussion highlights the difficulties that solar thermal represents within Australia. To build such a facility on Bayswater property would not be viable.

Section 10.1 of this report discusses the policy context of this project.

The TransGrid projections utilised include demand side measures and the CPRS.

6. Dust emissions from this proposal are described as 'a small proportion of background levels'. It is not clear in the application if this describes an additional proportion of the dust load in the Upper Hunter. Dust emissions in the Hunter Valley are already at an unacceptably high level. The impacts on human health are not being adequately monitored or studied. It is irresponsible to consider an increase in dust emission levels.

Dust emissions from the proposal will add a very small amount to existing levels. The emission controls that would be implemented by the Bayswater B Power Station Project will ensure that the emission rates of dust from the power station will be minimal. The proponent will be required to ensure that emission controls are maintained to ensure an ongoing minimisation of emissions of dust. Ongoing stack testing and reporting to the DECCW will ensure that the power station achieves the emission levels that have been stated in the air quality assessment.

7. The coal fired power option indicates a reliance on low sulphur coal to keep SO_2 emission levels down. There is no indication of the source of the supply of low sulphur coal which isn't already tagged for the export market. Nor if there is an adequate source of low sulphur coal for the predicted lifespan of the project.

It is not prudent to name the coal sources or suppliers at this stage as it would potentially damage the proponents' commercial negotiation position in sourcing coal as raw material, particularly as it is uncertain whether coal would be the preferred option for the project. Investigations have shown that there are adequate sources of coal with appropriate sulphur levels available for domestic consumption within a reasonable distance of the Bayswater B site.

8. The conclusion that this proposal would 'cause a relatively minor change to ambient air quality' is an indication of this report's inadequacies.

The conclusion that is cited is consistent with the outcomes of the assessment. The Air Quality Assessment has been conducted in accordance with the DECCW's Approved Methods.

9. It is unacceptable that the disposal of 1.6 Mt p.a. of fly ash in an open cut coal pits be considered in more detail at a later date, including the management of long term groundwater impacts.

As noted in the EA, it is unknown:

- Whether coal will be the chosen technology; and (if it is)
- The source of the coal; and (therefore)
- The composition of the fly ash;
- The location of the disposal point; and (therefore)
- The nature and characteristics of the receiving environment, including groundwater characteristics.

Only when these factors have been determined can a detailed assessment be made of the potential impacts and therefore the appropriate management measures. It should be noted that this application is for a Concept Approval. The detailed assessment would be provided in support of an application for Project Approval.

This issue is discussed further in **Chapter 8** of this report.

10. It is unrealistic to suggest there will be no adverse cumulative impacts from the proposal.

The assessment of the cumulative impacts of the proposal considered the cumulative impacts with respect to impacts associated with the proposed development, in addition to impacts associated with other projects in the region. It found the cumulative impact of the combined developments in the region has the potential to exacerbate the use of infrastructure and service resources within Muswellbrook and Singleton, and may impact on accommodation availability and price in the locality, as well as community service provision and access to childcare services. Mitigation measures to address these potential impacts would be considered in the detailed design stage of the proposal in consultation with Council, the DoP and other relevant Government Authorities, to create a coordinated approach to impact management and ensure issues are resolved.

11. The proposal is contrary to the NSW Government Climate Action Program and cannot seriously be considered by planners who have the long term future of NSW as a guiding principle.

Refer **Section 10.1** of this report for the policy context of this project.

12. It is impossible for this proposal to be considered justified under ESD principles or the public interest. It is not environmentally sustainable in any definition of the term and to consider it such is an insult to the intelligence of the people of NSW.

Schedule 2 of the *EP&A Regulation* requires that justification of a proposed project be provided with regard to biophysical, economic and social considerations together with the principles of ESD. Section 27 of the EA addressed the four interrelated principles of ecologically sustainable development (ESD): the Precautionary Principle; intergenerational equity; biological diversity and ecological integrity; and valuation and pricing of environmental resources. A further principle, the decision-making processes for the proposed project was also addressed as determined by the *EPBC Act 1999.* The assessment found that the proposal was justified when taking account of the principles of ESD. Furthermore it found that the proposal was in the public interest as it would:

- *supply baseload electricity demand and reliability of electricity supply in NSW*: In order to supply the requirement for additional baseload generation capacity within the next 6 – 10 years, the EA demonstrated that either a coal-fired or gas-fired power station would be required to provide sufficient scale or reliability of baseload electricity generation within this timeframe as renewable energy options are not as yet able to meet this level of supply requirements. The Bayswater B Power Station would be able to provide the required baseload generation capacity within the required timeframe, thereby meeting NSW's projected demand needs.
- *support electricity demand requirements of economic growth*: the proposal would provide baseload electricity generation in the context of ongoing government initiatives with respect to population and economic growth and future development needs. The steady growth of the population of NSW is resulting in demand for infrastructure growth to support development, which in turn requires increased electricity capacity.
- *support industries that would supply the construction and operation of the project*: If Bayswater B proceeds, raw material required to operate the power station (either 112 PJ per year of natural gas or 6.3 million tonnes per year of coal, over an estimated plant lifespan of 30 years) would provide significant and ongoing support to the mining and extraction sector, including in terms of employment in that sector. Similarly, significant volumes of materials such as steel and concrete would be required during construction, with flow-on effects in those industries.
- *support the local, regional and State economies*: the proposed Project would provide direct employment within the Upper Hunter region (particularly during the construction phase), indirect employment particularly amongst the goods and services sectors and a multiplier effect which would serve to stimulate the local, regional and State economies.

13.11 Hunter Valley Water Users Association

Submission	Response
We are very concerned at the ability of the Upper Hunter to supply sufficient water to justify such an investment during severe drought periods. Have severe concerns that the proposed drought contingency plans would be achievable either legally or practically.	Refer **Chapter 7** of this report.
Grave concerns that when it comes to economic decisions between efficiency of energy conservation and efficiency of water cooling come into play under a carbon trading scheme water cooling could still be considered.	The Concept Application includes only dry cooling. The wet cooling option was not selected in the current proposal given the difficulties in sourcing sufficient water. If Concept Approval is given, it will be for dry cooling, as per the assessment as laid out in the EA.
Other concerns include additional carbon emissions, loss of vegetation and discharges of saline water.	Refer **Chapter 6** of this report regarding GHG emissions, **11.1.6** and **11.6** of this report in relation to flora and fauna. As discussed in **Section 11.2.8** of the Bayswater B EA, no offsite discharge of saline water would occur from the Project. Water management would be subject to conditions of approval and EPL conditions.

13.12 Jamberoo FutureCare

Submission	Response
The members of Jamberoo FutureCare would like to express their objection to the proposed Bayswater power station.	Objection noted.
Fossil fuel power stations, especially coal, are the greatest threat to our climate. We have it within our power to stop this crude, out of date form of power production.	Objection noted. Also refer to **Chapter 6** and **Section 10.1** in relation to NSW and Federal policy contexts.
The move to renewables are a necessity for future generations and for the health of our planet. Only when we adopt renewables as the way forward can serious investment, research and development begin to address our climate crisis.	Objection noted; also refer to **Section 10.1** for policy context and **Chapter 4** on Alternatives.
How can we hope to reduce CO_2 emissions when more fossil fuel power stations are being proposed. We urge you to place an immediate ban on all new fossil fuel power stations in NSW.	Objection noted.

13.13 Lake Macquarie Climate Action Inc.

Submission	Response
Questioned whether additional baseload power required at this time.	Refer **Chapter 4** of this report.
Building two new power stations is a violation of our commitment to reduce GHG emissions.	Concern noted. Refer also **Section 10.1** of this report.
Coal fired power stations are the single greatest threat to the climate and therefore to life on earth. An immediate decrease in GHG emissions is required.	Objection noted. Refer to **Chapter 5** in relation to health, **Chapter 6** with regards to GHG and **Section 10.1** in relation to NSW and Federal policy contexts.
New coal or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%.	Refer **Chapter 6** of this report.
Request an immediate ban on new fossil fuel power stations in NSW	Objection noted
Request an urgent transition to renewable energy	Objection noted; also refer to **Section 10.1** for policy context.

13.14 LIVE

Submission	Response
To address climate change in the short time available will require urgent international action.	Concerns noted.
As arguably the greatest single contributor to the rising GHG causing climate change, ALL coal fired electricity generation must halt. It defies all rational thought for NSW to now be considering new coal OR gas fired power stations which would drastically increase greenhouse gas pollution in Australia.	Objection noted. Refer also to **Chapter 4** on Alternatives and **Chapter 6** on Greenhouse Gas Emissions.
Renewable energy and energy efficiency technologies are available here and now and will create many more and more sustainable jobs, which for both social and ecological reasons must be all governments' priority.	Objection noted; also refer to **Section 10.1** for policy context, **Chapter 4** on Alternatives and **Section 9.3** on impact to jobs.

13.15 Manly Warringah Climate Action Group

Submission	Response
Climate change is a global crisis that needs urgent action.	Concerns noted.
Coal fired power stations are the single greatest threat to the climate and therefore to life on earth.	Objection noted. Also refer to **Chapter 5** in relation to health and **Section 10.1** in relation to NSW and Federal policy contexts.
GHG must begin to fall immediately in NSW	Objection noted; also refer to **Section 10.1** on policy contexts.
New coal or gas fired power stations would drastically increase NSW GHG pollution by as much as 20%	Refer **Chapter 6** on GHG
Request an immediate ban on new fossil fuel power stations in NSW	Objection noted
Request an urgent transition to renewable energy	Objection noted; also refer to **Section 10.1** for policy context.

13.16 Nature Conservation Council

Submission	Response
Objection on the basis of unacceptable GHG emissions	Objection noted and refer **Chapter 6** of this report regarding GHG emissions
Gas fired station only acceptable as a peaking power plant and part of a transition plan to zero emission baseload power	Noted.
34% increase in GHG emissions from stationary energy is not acceptable	Objection noted and refer **Chapter 6** of this report regarding GHG emissions
Latest science attests that climate change is occurring more rapidly than previously thought. Atmospheric CO_2 needs to be maintained below 350ppm	Objection and concerns noted.
Australia is the highest per capita GHG polluter in the developed world	**Section 10.1** of this report discusses the policy framework currently in place to manage the Australian emissions. **Section 6.1** of this report also provides some broader global statistics to place the Australian contribution in context.
Coal is a far higher emitter than gas	This is noted.
While it is true that modern generators are more efficient than older ones, the construction of the power station will still represent additional GHG emissions.	Noted. Refer also **Chapter 6** of this report
CCS does currently exist nor is commercially viable	Refer **Chapter 6** of this report.
Factoring in high costs of CCS makes fossil fuels unviable.	At such time as CCS technology becomes commercially available (based on geo-sequestration), fossil fuelled power plant owners must make the choice between installing this technology at the prevailing cost or continuing to pay for CO_2 emissions permits under an emissions trading scheme (which we may assume will be operational by the time Bayswater B enters service).
CCS cannot be relied upon. CCS should not be factored in when assessing the proposal.	Noted.
Uncertainty over the CPRS and carbon pricing.	This is noted. Further comment cannot be made until the CPRS framework and content is known.
Nature Conservation Council can only support gas fired power station if it is replacing existing baseload generation or providing limited peak generation.	Noted
Gas not supported if it is to provide additional baseload as renewables and demand management can provide this.	Objection noted. Also refer **Chapter 4** of this report.
Project based on the Owen Inquiry which was flawed	As noted previously, the Owen Inquiry was the catalyst but the planning for the project has used the TransGrid projections.

Coal fired power stations are operating at 65% in NSW, well below other states, which means that baseload power is not required for some time.	Based on the 2008 TransGrid projections and the probable contribution from new renewables in NSW by 2016, the NSW coal fired power stations will be operating at all time record levels of annual average output (in the order of 85%). This is a very high capacity factor given the age of the plant.
Rather than building new polluting power stations, we would be better focussing on developing policy for demand management and energy efficiency.	Noted
CCS is unproven whereas renewables represents an active market. Wind power is a mature technology and solar thermal is an idea technology for NSW. The Nature Conservation Council supports policies regarding roof-top solar photovoltaic panels can make up a significant shortfall. Geothermal has enormous potential in Australia. Local co-generation and trigeneration has also been trialled successfully in the UK.	Renewables, particularly the limitations of wind and solar thermal in NSW, is discussed in **Chapter 4** of this report. The comments regarding solar photovoltaic panels are noted. The technology for exploiting hot rock energy is not mature, and is still in the development stage. It would be unable to attract commercial debt support. The deployment of cogeneration and trigeneration technology would yield energy savings. If technology were to successfully deployed on a wide scale in the City of Sydney, it may lead to the deferment of the proposed Bayswater B project by approximately 1 year.
The Council is concerned about the effects of long wall mining and its effects on hydrology.	This is not applicable to the Bayswater B project

13.17 North Shore Climate Action

Submission	Response
We need to decrease GHG emissions; more coal fired power plants will make this harder to do.	Objection noted; also refer **Section 10.1** of this report.
The science proves that burning fossil fuels is the worst offender when it comes to GHG emissions.	Noted.
Should say no to new coal fired stations, to send a strong message to polluters and show support for green technologies.	Noted.
A new coal fired plant is environmental vandalism and may also result in coal companies/government being open to litigation due to the clear link between GHG and coal.	Concern noted.

13.18 Queensland Hunter Gas Pipeline

The Queensland Hunter Gas Pipeline provided a submission of support to the Bayswater B gas fired option and providing additional information with regard to their construction timeframe and general status of the pipeline, in terms of how this would tie in with construction of Bayswater B if applicable.

13.19 Rising Tide

Submission	Response
Rising Tide is opposed to the construction of any new fossil-fuelled baseload power station in NSW, particularly coal-fired.	Objection noted.
Climate change is a global crisis that needs urgent action. Greenhouse pollution must begin to fall immediately.. Approximately 300,000 people will die this year due to climate change.	Objection noted. Refer to **Section 10.1** of this report with regards to policy and **Section 5.9.3** with regards to human health and climate change.
The planned new coal or gas fired power plant would increase greenhouse pollution by up to 20%. If coal is used there will be an increase of approx. 20% on top of NSW emissions, for gas about 10%.	The increase in NSW emissions for coal or gas would be approximately 7% or 3.7% respectively. This is discussed further in **Chapter 6** of this report.
Coal fired power stations are the single greatest threat to the climate, therefore to life on earth. There must be an immediate ban on new fossil-fuelled power stations in NSW and a phase-out of existing coal fired power stations.	Objection noted. Also refer to **Chapter 5** in relation to health and **Section 10.1** in relation to NSW and Federal policy contexts.
There must be an urgent transition to renewable energy, increased demand management and improvements in efficiency of energy distribution systems.	Noted. Refer also to **Section 10.1** (policy) and **Chapter 4** (alternatives).

13.20 Singleton Shire Healthy Environment Group

Singleton Shire Healthy Environment Group (SSHEG) submitted a detailed letter outlining their concern for the health of local residents in Singleton and requiring a full and cumulative health impact study. Public health has been discussed in more detail in **Chapter 5** of this report, which includes some publicly available baseline statistics for the area to provide context.

13.21 The New School [Not Old School] Collective

Submission	Response
Coal-fired power stations are Australia's single biggest source of GHG pollution. Two new power stations (Bayswater B and Mt Piper) would increase annual NSW GHG by 20%, driving runaway climate change which is causing species extinctions and killing 300,000 people per year	Objection noted. Refer **Chapter 5** of this report regarding public health and **Chapter 5** regarding GHG emissions.
Gas isn't a "clean" source of energy. There needs to be a moratorium on new fossil fuel power infrastructure. New power for NSW must be renewable.	Objections noted. Refer **Chapter 4** of this report on Alternatives.
The new power stations would drive expansion of existing coal mines and encourage new ones and would ensure Hunter Valley and Lithgow remain dependant on the coal industry	Coal has not been confirmed as the preferred technology and no technology will be chosen until a later date. Notwithstanding, it is likely that even if the Bayswater B project is built as a gas fired option or does not go ahead, the coal industry would continue to thrive given the buoyant national and international market and Australia's ability to export easily within Asia and beyond.
The new power stations would stifle investment in renewables	Refer to **Section 10.1** of this report in relation to Policy Issues and the context of renewables targets.
The new power stations would exacerbate environmental and health issues in surrounding communities	Refer to **Chapter 5** of this report with respect to Health.
The power station should not be built unless it includes, from formation, a fully integrated and operational CCS system.	Noted. Refer to **Section 6.4** of this report.
There is no such thing as clean coal	Concern noted.

Share concerns about 'short to long term impacts of the Bayswater B and cumulative development on the social health of the community including displacement of local populations, availability of affordable housing, cost of living, income distribution, growth of casualisation of the workforce and displacement of full time permanent positions, provision of health, education and social order'.	Refer to **Chapter 9** of this report with respect to socio-economic impacts, and also to **Section 12.2** (point 6 of the response to Dissenting Members of the Muswellbrook Shire Council). The social and economic impacts of the proposal together with the cumulative impact with other projects in the region would be fully addressed by the proponent as part of the detailed planning for the power station. Commitments include: • a detailed design and construction logistics reports based on the information provided in the EA in order to plan appropriately to avoid where possible all potential negative effects; • location of the construction workers camp to be considered with due care and attention in order that workforce requirements are carefully managed; • review and update of the Social and Economic Assessment contained in the EA on the basis of the finalised detailed design and construction logistics report to confirm the extent of potential effects; and • consultation with Muswellbrook and Singleton Councils with regard to the detailed proposals.

13.22 Total Environment Centre

Submission	Response
Climate change is a global crisis that needs urgent action. A rapid reduction in GHG emissions is required from the electricity sector. New power stations would increase NSW's emissions by up to 36%	The Bayswater B project (if coal and operating at full capacity) would increase the NSW emissions by some 3.7% - 7% depending on the technology selected. This is discussed further in **Chapter 6** of this report.
A new coal fired power station would signify a massive failure of both state and federal climate change policy and would stifle development of renewable industries.	Objection noted. Refer also **Section 10.1** of this report regarding policy context, and also **Section 9.3** regarding impact to jobs.
The UTS study outlines several scenarios through which energy shortfalls can be met by demand management and renewables.	Refer **Section 10.2** of this report
The 2009 Electricity Statement of Opportunities by the AEMO notes that in 2015/16 only 182 MW of additional capacity will be required in 2015/2016.	The SOO compiled by AEMO uses a re-production of the figures compiled by TransGrid in their Annual Planning Report. As stated in the EA (and **Chapter 4** of this report), the shortfall is likely to occur in 2016/17. This is based on the TransGrid 2008 projections which (given the recovery from the Global Financial Crisis) are likely to be more accurate than the 2009 predictions which were projected downwards in the face of the GFC.

New coal fired power stations will consume more of our dwindling water supplies	As stated in the EA, a dry cooled option was chosen given that a wet cooled option (which represents a better GHG emissions solution) required higher levels of water that could not be guaranteed. The water required for the dry cooled option will be sourced from MacGen's existing purchased water entitlements.
A 2007 Newspoll revealed 82% of adults did not want a new coal fired power station but would prefer future energy needs to be met via renewables and improved energy efficiency.	Noted.
The NSW Government must not approve this power station but should instead declare a moratorium on any new coal-fired power station.	Objection noted.

13.23 Wollongong Climate Action Network

Submission	Response
The proposed development (whether coal or gas) would cause a substantial increase in GHG emissions therefore it should be rejected.	Objection noted. Refer to **Chapter 6** of this report regarding GHG emissions.
Alternative renewable energy sources should be used instead.	Refer to **Chapter 4** of this report regarding alternatives.
Australia is the largest per capita emitter of GHG and we should not plan to increase these emissions.	Refer to **Chapter 6** of this report regarding GHG emissions and **Section 10.1** with regard to policy context.
We believe that the applicant would prefer to build a coal power station, with gas as a fallback option; however, neither a coal nor gas powered plant is acceptable as a baseload power source. Gas should only be used as a supply/demand tool and coal should not be contemplated.	Concern noted. Refer to **Chapter 4** regarding Strategic Justification and Alternatives.
Decisions about power generation should not be made on commercial cost alone. Climate change risk must be considered. The community is concerned about climate change and does not want more fossil fuel power stations.	Noted. The assessment of the EA on the part of the government agencies is undertaken on the technical merit of the specialist studies undertaken and the adequacy of response to the EARs, with regards to a range of environmental, social and economic issues. Refer also to **Section 6.3** of this report with regards to climate change and **Section 10.1** on policy context.
Incorrect to contend that cheap extra energy has a vital national economic purpose as most of the energy created will be used domestic households rather than for export-exposed industries.	This was not a contention or assertion within the Bayswater B EA.
Higher electricity prices will not ruin Australian industry. Currency exchange rates and interest rates have a much greater effect on our international competitiveness than electricity costs.	Noted.
EA states that "renewable energy production increase… is not predicted to be sufficient to fulfil the need for increased baseload generation…" – This assumes a continued government mindset of delay with regard to renewable energy, energy savings and RET implementation, which may not be true.	Refer to **Section 10.1** of this report regarding policy, and **Chapter 4** Strategic Justification and Alternatives.

EA states that 'Renewable energy production increase is.....unlikely to be economic before 2040' - this statement is unfounded.	The actual reference in the EA is more in reference to baseload generation by renewables being unlikely to be economic before around 2040. This assertion was taken from the Commonwealth Parliamentary paper by Stewart Needham. While renewables are already making an important contribution to electricity supply needs, given their present state of development (small scale and expensive or lacking energy storage features) they cannot perform the role of the baseload generator needed by 2016. Further development in the renewables sector is required before any significant level of substitution of fossil fuel power can take place. By 2040 it is expected that these disadvantages will no longer apply to most renewable technologies. Therefore they will be much more economically viable and their use in baseload operations should be commonplace.
CCS technology cannot be economically 'tacked on' to a fossil fuel power station unless the station is specifically designed for CCS. It is misleading to infer that it will be easy to add CCS in future.	As noted in the EA, this project has been designed to be CCS ready with specific allowance made for retrofitting of carbon capture plant; a regular review of the CCS options will ensure a continued assessment of the availability and viability of carbon capture and storage.
If the cost of CCS is included in the cost of fossil fuel power, it becomes more expensive than renewable energy and energy efficiency measures.	At such time as CCS technology becomes commercially available (based on geo-sequestration), fossil fuelled power plant owners must make the choice between installing this technology at the prevailing cost or continuing to pay for CO_2 emissions permits under an emissions trading scheme (which we may assume will be operational by the time Bayswater B enters service).
This project will exacerbate climate change and will enhance the conflict between the power station owner and the community objective of cutting emissions, with resultant risk of future taxpayer funded buy-outs.	Objection and concern noted.
"Electricity can be generated by renewable means...but only in relatively small quantities". This statement is wrong. The Federal Government has announced funding for solar power plants which will generate the same as a coal power station. (e.g. Germany and wind power, California and Europe with solar).	Refer to **Chapter 4** of this report with regards to alternatives
There is no proof that CCS will ever be commercially viable. Therefore, additional fossil fuel power is incompatible with a 2020 emissions reduction target.	Refer **Chapter 6** and **Section 10.1** of this report.

Any statements about the full cost of CCS are meaningless without documentation of major assumptions about these costs.	As CCS technology is not yet commercially available, assumed cost estimates have been used. As detailed in the EA, Indicative Cost/Benefit includes the anticipated cost of a carbon capture and compression plant – estimated to increase the overall cost of the power station by 50%. This is derived from the report "Investigation of Carbon Dioxide Sequestration Options for NSW Power Generators - Stage 1 Summary Report", Lowe, 2007, which utilised recent projections of PCC plant cost reviewed by the IPCC. The EA excluded pipeline and storage costs, however these are estimated to increase the cost of the power station by another 5-10%, dependent upon distance of pipeline, nature of the storage site, storage requirements, etc.
Particularly, the assumptions regarding cross subsidy by the taxpayer for land use and public liability must be clarified to the community.	All costs involved in CCS were covered by the above assumption. It is not possible to define assumptions with regards to these aspects in detail at this point in time, but these would be determined prior to implementation of CCS if and when applicable.

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PART D – Revised Statement of Commitments

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14.0 Revised Statement of Commitments

This section provides the revised Statement of Commitments on the basis of submissions received. Items in bold and underlined represent new items.

Commitment
General Commitments
1. The Proponent will undertake the activities, the subject of the Concept Approval in accordance with the general descriptions and details provided in this EA, including the mitigation and management measures identified in this EA.
2. The Proponent will gain all necessary approvals and permits supporting both construction and operation.
3. The Proponent will prepare and implement the following management plans for the project: - A Construction Environmental Management Plan (CEMP) and - An Operations Environmental Management Plan (OEMP). - <u>These plans shall conform to International Standards ISO:14001.</u>
4. The Proponent will undertake further detailed environmental assessment on a range of issues as identified in this SoC. <u>The Proponent will undertake consultation with the community and with Muswellbrook and Singleton Shire Councils as part of a Project Application which would include the assessments as detailed in the SOC.</u>
5. <u>Any plans required as part of a Concept Approval, or as part of the Project Approval would be submitted to the Director General for sign off and upon completion would be placed on the Proponent's website where relevant and appropriate.</u>
6. The Proponent will ensure that the final design footprint of the Bayswater B power station is determined in consideration of <u>the EA, the Submissions Report and any Project Approval submissions</u> relevant environmental constraints with a view to minimising the potential impacts of the Project.
7. The Proponent will ensure that the final design locations of linear infrastructure associated with the Project (roads, conveyors, pipelines) are selected generally in line with the following: - In existing disturbed areas wherever <u>practicable</u> Avoiding vegetation, watercourses and riparian areas <u>where practicable</u> - Avoiding Aboriginal heritage places or items <u>where practicable</u> - Utilising existing access tracks where practicable - <u>Minimise</u> impacts on existing <u>non Macgen</u> infrastructure - On relatively flat ground (i.e. less than 10% gradient) <u>where practicable</u> - Considering visual effects and opportunistic use of natural screening such as vegetation - Considering land use and <u>reasonable</u> landowner preferences. - <u>Final design details will be determined by the project Proponent. The design of linear infrastructure will be such as to not preclude or inhibit reasonable potential future widening of the New England Highway by an agency or other party</u>

Commitment
Air Quality
8. The Air Quality Assessment will be reviewed during the detailed design phase. The assessment would be undertaken in accordance with DECCW established methodologies and the Director General's Environmental Assessment Requirements for the Project Application.
9. An Air Quality Management Plan will be prepared for inclusion in the CEMP and OEMP
10. Air quality management practices will be included within the Ash Disposal Plan to guide operations (if coal fired technology is selected)
11. An Air Quality Monitoring Program for the operations phase of the project will be prepared once selection of the preferred technology has been undertaken.
12. The proponent will become a signatory to the Upper Hunter Air Quality Monitoring Network.
Greenhouse Gas
13. The Proponent will undertake a review at least every three years of the viability of carbon capture, transport and storage technologies, along with opportunities to invest in carbon offset projects. The results of each review would be provided in a report to DoP.
Water Management – Detailed Design Phase
14. The Proponent will undertake the detailed design of the project supported by the considerations outlined in the Water Quality section of this EA in order that the project and its drainage catchment areas can be designed to appropriately divert and treat where necessary, stormwater and wastewater.
15. The Proponent will prepare a Soil and Water Management Plan, including a Water Quality Monitoring Program, as part of the OEMP
16. The Proponent will prepare an Emergency Spill Preparedness and Response Plan as part of the OEMP
Water Management – Construction Phase
17. The Proponent will prepare a Soil and Water Management Plan as part of the CEMP
18. The Proponent will prepare an Emergency Spill Preparedness and Response Plan as part of the CEMP
19. Where construction of access roads or pipelines to the proposal and connecting roads/infrastructure involves crossings of, or works near, a watercourse, the Proponent will ensure that a controlled activity approval is obtained under Clause 91 of the *Water Management Act 2000*.
General Soil Management
20. The Proponent will undertake further testing and design modifications for construction works in respect of sodic and dispersible soils, salinity, gypsum requirement, structural hazards and acidity prior to construction.
21. The Proponent will prepare a Soil and Water Management Plan (SWMP) as part of the CEMP and the OEMP (refer also above). The OEMP will include measure to address long term management of potential issues such as salinity, erosion and acidity.
Rehabilitation – General
22. The Proponent will prepare a Rehabilitation Management (RMP) Plan as part of the CEMP and OEMP

Commitment
inclusive of: (a) construction rehabilitation; and (b) post operational rehabilitation.
Groundwater – General 23. If coal is selected as the preferred technology, the Proponent will prepare an Ash Disposal Plan which will address potential impacts on groundwater. 24. The Proponent should ensure that seepage of water into excavations during construction (which may occur following rainfall events) is managed in accordance with the CEMP to be prepared for the Site. 25. The CEMP will also include measures for the response to and management of potential spills and leaks
Noise 26. As part of the CEMP the Proponent will prepare a Construction Noise Management Plan in accordance with the DECCW "*Draft Construction Noise Guidelines"*. 27. As part of the OEMP the Proponent will prepare a Operational Noise Management Plan in accordance with the DECCW "*Industrial Noise Policy*"
Flora and Fauna Management – General 28. The Proponent will review the Flora and Fauna Assessment on the basis of the detailed design to ensure that the impact assessment is appropriate. 29. The Proponent will undertake pre-construction surveys during an appropriate season for *Litoria aurea* (Green and Golden Bell Frog), *Diuris pedunculata* (Small Snake Orchid) and *D. tricolour* (Pine Donkey Orchid) and such further species as the Proponent in its surveys should identify. 30. The Proponent will prepare a Vegetation Management Plan (VMP) as part of the CEMP. 31. The Proponent will ensure that the VMP, the RMP and the SWMP contain appropriate measures to avoid or reduce secondary/downstream impacts, including the effects and requirements of rehabilitation.
Heritage 32. The Proponent will fence off and avoid highly significant Aboriginal heritage sites. 33. The Proponent will ensure that the contents of Aboriginal sites impacted by the development are collected and relocated (set-aside) to the closest area within the same landform not impacted by the development. The site relocation exercise will be conducted by the Aboriginal community working with an archaeologist who will recorded the destination locations of artefacts moved and prepare a report to be deposited with relevant DECCW files. 34. The Proponent will ensure that a program of archaeological test excavation is undertaken prior to Project Approval to clarify the extent of potential archaeological deposit on site and to identify appropriate areas of concentrated archaeological material suitable for archaeological salvage excavation as outlined in **Appendix G**. 35. The Proponent will ensure that archaeological salvage excavation occurs in locations of significant deposit or features as identified through test excavations. The salvage methodology may include a number of excavation methods and will be limited to the development impact area. 36. The Proponent will ensure that the archaeological salvage methodology is detailed in a research design

Commitment
document prepared in consultation with DECCW and DoP. 37. The Proponent will ensure that the Aboriginal community is involved in the salvage excavations. 38. The Proponent will ensure that salvaged Aboriginal heritage material / recovered artefacts are managed as specified in this EA.
Social and Economic Assessment 39. The Proponent will prepare a detailed design and construction logistics report based on the information provided in this EA in order to plan appropriately to avoid where practicable potential negative social effects 40. The Proponent will ensure that the construction logistics/planning takes account of potential construction staging and timeframes that coincide with other known major project development (for which adequate advanced notice is given) as well as coincide with peak tourism times and significant local festivals 41. The Proponent will ensure that the location of the construction workers camp is considered with due care and attention in order that workforce requirements are carefully managed 42. The Proponent will review and update the Social and Economic Assessment contained in this EA on the basis of the finalised detailed design and construction logistics report to confirm the extent of potential effects and will consult with Muswellbrook and Singleton Councils. 43. The Proponent will ensure that the CEMP includes: - Traffic management including management of delivery times, shift times and transport routes to be protective of sensitive receptors and amenity users (such as school zones, quiet areas and hospitals) - Workforce management plan to ensure ongoing principles are observed, including management structure of the site - Stakeholder engagement plan to ensure ongoing communication with the community regarding progress, and including a complaints handling procedure - Rehabilitation plan that includes the process for making good damage caused during the construction period to non proponent owned or controlled facilities.
Hazard and Risk 44. The Proponent shall ensure that fuel filling points for bunded fuel storage tanks and road tanker fill area be located no closer than 12 m to buildings and structures at the proposed power station. 45. The Proponent shall implement the gas spur pipeline (if gas fired technology is selected) in accordance with the provisions of AS2885 and applicable licence conditions under the NSW Pipelines Act. 46. A safety management system shall be developed specifically for the pipeline, which should include regular pipeline route and equipment inspections, line pigging with intelligent pigs every 5 years, inspection and checking of the impressed current corrosion protection system. 47. The Proponent will ensure that storage of chlorine cylinders is in a depot designed to comply with the requirements of AS2927-2002. The chlorine storage area will be fitted with safeguards including gas detection, alarms and a chlorine shut down system. The Proponent will also ensure that: - Pigtails should be replaced regularly (e.g. once every 6 months) to minimise the potential for premature failure - As per AS2927-2002 chlorine storage and handling components with potential for failure should be inspected regularly to identify wear or potential failure points, with maintenance or replacement as required 48. The Proponent will ensure that ammonia is stored to reduce the risk of accidental release include the following safeguards: - The ammonia tank filling point would be protected by impact barriers. - Ammonia transfer operations would be attended by the delivery driver, who would activate the emergency shut down of the transfer in the event of a leak - The ammonia tank and associated pipework would be fitted with gas detectors and a permanent fire

Commitment
water fog nozzle. 49. The Proponent will apply to CASA for an “Operational Assessment of a Proposed Plume Rise”. 50. The Proponent will notify CASA of the final stack height (depending on whether the gas or coal option is selected) for inclusion in the RAAF Aeronautical Information Service tall structure database.
Traffic 51. The Proponent will ensure that a Traffic Management Plan is prepared as part of the CEMP
Waste 52. The Proponent will ensure that a Waste Management Plan is prepared for inclusion in both the CEMP and OEMP. 53. The Proponent will prepare an Ash Disposal Plan (if coal fired technology is selected)

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Appendix A

Submissions

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Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
1	Private individual	We must not construct any new coal fired power stations or expand existing ones. On the contrary we must start decommissioning them right away. Any extra pov must be provided by renewable sources. Cost does not come into it, the reduction of CO2 emissions must be the paramount objective.	Chapter 4 Alternatives	Objection noted
2	Private individua	Objection to project overal		Objection noted
3	Private individual	Climate Science is extremely clear that climate change is happening and needs urgent actic the burning of coal causes harmful CO2 emissions; coal fired power stations are wrong for NSW as they are globally; they are the single greatest threat to the climate, and to life on earth; all efforts of the government must be directed to reducing greenhouse pollution, so that CO2 levels fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; incentives must be provided to provide an urgent transition to renewable energy; government efforts need to be directed to support a green economy with renewable energy at the core of technology and investment.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
4	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are wrong for NSW as they are globally; they are the single greatest threat to the climate, and to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
5	**Electricity Week**	The EIS refers to CO2-e exposure as "sent out" electricity - for example "Ultra Supercritical Technology with dry cooling which yields a sent out greenhouse intens of 0.83 t CO2-e/MWh". For accurate greenhouse accounts this environmental plan needs to account for ALL CO2 produced in production. For example the coal option intends Post Combustion Carbon Capture (PCCC); and (while not described) requires CO2 compression and pumping to a waste dump. For accuracy the non-sent out load of the whole process needs accounting. For example, in the water accounts the increased cost limestone for dry-cooling is accounted. For consistency and accuracy, the environment review should account for all loads, and all production chains in terms CO2-e/MWh; and this includes ash trucks to the Ravensworth ash dump; and coal, where the project operates coal chain. In the case of stack height and particulate and other pollution the report must likewise report ALL pollution, no matter what the height. In this EIS, it accounts for ground-level data only. For example, plumes change weather, a study of BOM weather maps over time indicates	See Section 13.5 for specific responses	Objection noted
6	Private individual	Climate change is a global crisis that needs urgent and profound actio Climate change is already killing people all over the world including Australia; coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; Building new fossil fuel power stations and continuing to allow existing ones to operate means that the NSW government is indirectly responsible for the thousands of deaths already caused by climate change greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to 100% renewable energy.	Chapter 4 Alternatives Chapter 5 Air Quality (incorporating Public Health) Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
7	Private individual	I object to the building of the Bayswater B power station on the grounds that it will increase unacceptable levels of C02 adding to dangerous climate change		NGERs and NGA are formulated by DECCW and utilised to review and assess projects in order that unacceptable levels of of CO2 are avoided. The results of these are also utilised by government to formulate policy regarding climate change and renewables.
8	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
9	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
10	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
11	Private individual	This proposed new power station would contribute very significantly to greenhouse gas emissions in Austral Given that climate scientists such as NASA's James Hansen have estimated that we have a window period of only five years to cut global emissions dramatically, to go ahead with this project would be to knowingly contribute to runaway climate change. We are already witnessing climate change that is occurring at a rate far faster than predicted, with arctic ice, as well as Greenland and Antarctic ice sheets melting rapidly. Ocean acidification is also occurring far more rapidly than predicted, with far-reaching implications for biodiversity. The New South Wales government should be taking strong action to make a switch to renewable energy as quickly as possible - There should be a ban on any new coal-fired power stations. Expanding coal power is not only irrational but criminal, and may well be judged as such by courts of law in the future.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
12	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
13	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
14	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy. Allowing the expansion of coal fired power in NSW, and anywhere in Australia, indicates a complete lack of consideration for the future of NSW - its coastline, farmland and its people.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
15	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
16	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
17	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
18	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
19	Private individual	There is overwhelming evidence that climate change is a global crisis that needs urgent and immediate acti Coal fired power stations such as that proposed are the single greatest contributor to climate change. In order to avoid dangerous climate change greenhouse pollution must begin to fall immediately. Therefore any proposed new infrastructure that will increase greenhouse pollution output in NSW should not be approved. The new coal or gas-fired power station proposed would increase NSW greenhouse pollution by as much as 10%. There are other technologies that can provide base-load power, such as solar thermal, that are economically and technologically viable. Moreover, building practical expertise in the renewable energy industry by way of building and installing renewable energy power plants would give NSW a lead in the inevitable transition away from fossil fuel based power stations.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
20	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
21	Private individual	Climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy. I am a single mother living with children reliant totally on solar power. The changes I have made to become energy efficient have not been difficult. I object to the planning and building of such a short-sighted answer to power needs.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
22	Private individual	I would like to object to the application for new coal fired power stations in NSW. Australia should be moving away from damaging CO2 producing coal powe renewable technologies. There is NO excuse to continue to building power stations that use coal when we have the technology to produce power through non pollu methods that also produce more employment opportunities than coal. I write this submission on behalf of my children and grand children. It is THEIR world you are destroying.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
23	Private individua	I object to new coal fired power stations because of their massive CO2 emissions contributing to climate change, pollution and ugly mining landscap		Objection noted
24	Private individual	Nothing in this submission is of a confidential nature I object to the approval of the Bayswater B extension on the following grounds: The earth faces a climate crisis caused by CO2 emissions, and here we are in NSW proposing a new coal fired power station! The worst part of the proposal is the 50 year life expectancy of the plant, and the fact that building old technology generators takes away the impetus to build the new technology that will give us zero carbon electricity. The pessimistic predictions from ABARE that NSW electricity demand will continue to grow have been widely criticised. These ?business as usual? predictions take no account of energy efficiency measures being rolled out, and market responses to rising prices. Electricity prices will rise due to the increasing costs of water and coal even if the ETS carbon price is botched by the Commonwealth. Carbon capture and storage. The environmental assessment exhibits selective blindness to emerging technologies. CCS is a possible technology that may dispose of CO2 in a very expensive	Chapter 4 Alternatives Section 10.1 Policy Contexts	The EA states that the lfe expectancy may be around 30 years which may be extended however, that may be shortened if renewables start to displace fossil fuel power plants. It should be noted that the only technology that can produce a baseload level of power that will result in zero carbon emission is currently nuclear
25	Private individual	Do not build a fossil fuel power plant at Bayswater (or at Mt Piper). This will contribute to climate change and deny the opportunity for NSW to be a leader in gr energy technologies. Building more coal and gas-fired power plants is an expensive quick fix that will kill jobs for our children, damage the health of nearby residents and jeopardise the health of the planet. The NSW Government should be a leader not a laggard on clean energy technologies.	Chapter 4 Alternatives Chapter 5 Air Quality (inc. Public Health) Section 10.1 Policy Contexts	Objection noted
26	Private individua	stopnow donot put a new powerplant in the huntervall		Objection noted
27	Private individual	I submit that climate change is a global crisis that needs urgent action and we know coal fired power stations are the single greatest threat to the climate, and therefore to life on earth. We must reduce greenhouse pollution levels immediately in NSW; New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20% ? it is insane to knowingly and deliberately do this at this critical period. I urge an immediate ban on new fossil-fuelled power stations in NSW; coal is dodo technology ? we need instead an urgent transition to renewable energy. Energy efficiency measures and a mix of renewables can help prevent further climate chaos ? already evident and it doesn't need to get any worse!	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
28	Private individual	I submit the following as strongest possible objection to the proposed new coal fired plant at Bayswat - As recently articulated by eminent NASA climate scientist Professor James Hansen, coal is the singlest greatest threat to dangerous or irreversible climate change. - the implications of climate since SINCE IPCC AR 4 are that the choice of emissions reduction pathway is more critical than previously thought - we must make deeper cuts sooner. - it is disgraceful that NSW would forge ahead with new coal power, when it is in such an enviable position to forge ahead with renewables. - NSW is setting a poor example to other states, and to the world by considering going ahead with such a proposal at such a critical point in the Earth's history - Some other jurisdictions have committed to forbidding new coal power unless it is fitted with CCS. - per capita, the Australian power sector is the highest emitting in the world - and public knowledge of this fact is growing - the environmental impact assessment is flawed in its conclusion that this proposal will not harm world heritage. Recent case law on the EPBC Act has affirmed that cumulative impacts and indirect impacts must be considered in EIA's. I have not looked closely at the detail, bu Australia's emissions, and therefore climate change, will have no impact on world heritage. - I respectfully ask ALL key decision makers in this project to read for themselves, the recent Hansen science if they have not done so already.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	The Project has been referred to the Commonwealth Department of Environment, Water Heritage and the Arts (DEWHA) and is awaiting determination
29	Private individual	I object to the above project. The reasons for my objection are that Macquarie Generation the NSW State Government are making inadequate attempts to significantly promote power generation plants that do not use coal in whatever refined manner as promoted in the plan. In addition the NSW government should instigate changes to the power charging system to reduce the base load requirements of the state's power needs. This co be achieved by: 1. Installing meters in homes and businesses so that electricity used in the peak periods is charges at a significantly higher rate (say 30%), which will then result in a reduction in power used during the periods that drive base-load requirements. 2. Instigating a consumer awareness program that highlights to the public that the base-load for peak levels can be reduced. This could be achieved by regularly advertising in Newspapers, TV and radio. The result would initially be that NO NEW COAL-FIRED or partly coal-fired power stations are built.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
30	Private individua	STOP RAPING THE PLANET NOW		Objection noted
31	Private individual	climate change is a global crisis that needs urgent and immediate action; coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
32	**Lake Macquarie Climate Action Inc.**	A recent report has proved that new fossil-fuel power stations are not needed in NSW at this time, see attachmer To build 2 new stations would be a waste of taxpayers' money and a gross violation of our commitment to reduce carbon emissions climate change is a global crisis that needs urgent action; coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent and just transition to renewable energy.	Refer Section 13.10 for seprate response	Objection noted
33	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
34	Private individual	The approval of this proposal would be a disastrous set back for NSW, and indeed Australia and the world. That new coal stations are being considered, which are known to be so emission intensive, is insulting to the efforts of every local & global movement acting towards reducing their footprint. The hypocrisy in this proposals approval would be a devastating blow, with frightening environmental consequences. I hope you will consider refusing this planning application, & therefore assist in guiding organisations to redirect their investment in RENEWABLE technologies. The short-term economic gain from coal burning electricity generation is close to criminal based on what we now know regarding climate change & the imminent threat.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
35	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
36	Private individual	I am opposed to any new coal power stations in NSW, as they will vastly add to our greenhouse emissions a divert money and resources from renewable energy development. Climate change will continue to adversely affect all of our lives, and it is of the utmost importance that we don't make it worse.	Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
37	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
38	**North Shore Climate Action**	We have a small window of time in which to get our emmissions under control. Add more coal fired plants will make this job harder or impossible to do. The scienc in there is no doubt that buring fossil fuels is the worst offender when it ocmes to green house gas emmisssions. By taking the lead and saying no more coal stations will will send a strong message to the polluters and it will help the green technolgies by giving them the message that the government will be looking at clean technologies for our future coal needs. It is an act of environmental vandalism and may also leave the coal companies/government open to litigation as a clear link has been established between coal and green house gas pollution.	Refer Section 13.14 for separate response	Objection noted
39	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy. We as responsible citizens and guardians of the earth need to act now to ensure a future will exist for our children and our childrens children	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
40	**RTA**	***Refer to Letter and Diagram***	Refer Section 11.3 for separate response	
41	Private individual	I object to this new coal powered station. The increased impacts on greenhouse gas emissions must not be allowe We are already past the point of avoiding negative climate change. To add more greenhouse gas immersions is irresponsible and reprehensible. If energy efficiency measures are not sufficient to negate the need for new power generation, only renewable energy technology should be considered. Ps I have not made any political donations.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
42	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
43	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW;new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
44	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

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45	Private individual	~ climate change is a global crisis that needs urgent actio ~ coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; ~ greenhouse pollution must begin to fall immediately in NSW; ~ new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; ~ there must be an immediate ban on new fossil-fuelled power stations in NSW; ~ there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
46	Private individual	I strongly object to any expansion of Bayswater Power Station which results in an increase in greenhouse gas emissior Neither the coal or gas option is acceptable if we are at all serious about tackling climate change. Instead of expanding fossil fuel electricity generation we need to focus on energy efficiency, demand management and expansion of renewable energy. "Increased demand" is not a sufficient reason to be expanding electricity generation in NSW. We should be educating consumers (including industrial consumers) about the real consequences of their increased demand, i.e. we risk making our planet unliveable.	Chapter 4 Alternatives	Objection noted
47	Private individual	The idea of building two new coal power stations in the Hunter Valley and the Blue Mountains is draconian. Please set aside petty differences within the st parliament as well as the notion that quick fix employment gestures for the NSW economy can be made. Please think forward and make continued concerted efforts on a large scale in the areas of renewable energy. It just takes a bit of foresight and ok, a bit of fresh-air mindedness. The savings for the wider community will be astronomical in the medium and long term if we adopt renewable energy as a norm for the future. Please don't legislate for the detriment of the environment.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
48	Private individual	It is depressing to know that the people in charge of how we treat our planet are so careless. It should go without saying that it is completely backwards to be investing money in new coal power stations. Governments need to make their priority renewable energy, rather than making excuses. I think it will come as a shock when my generation is of voting age as we do not trust the current governments to make responsible decisions about environmental issues.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
49	Private individual	The year is 2009 and in a few months time, global leaders will be negotiating an international agreement to reduce greenhouse gas emissions. At the same time, it is unfortunate to hear plans of expanding the use of coal as a source of energy, against majority scientific opinion and advice. I object to this development on the basis of its impact on the environment and climate. To my mind, such a proposal is criminal. At a time when we are looking at smart ways to respond to climate change, it is criminal to continue burning coal when we should be investing time and energy into sustainable, alternative sources of energy. Renewable energy has the capacity to supply base load power to the state and lead to the creation of employment for those working in the existing coal industry. I would like to see New South Wales lead the country, if not the world, in the development of clean, sustainable energy. I don't wish to see New South Wales continue blindly down the path of increased emissions. The game is over. Let's get smart about technology and energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
50	Private individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase the 2. NSW doesn't need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
51	Private individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase the 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
52	Private individual	At a time when action on climate change is urgently needed, it?s hard to believe that new coal-fired power stations are being planned. Our federal governm currently had negotiators involved in the leadup to Copenhagen meeting to, amongst other things, set binding domestic targets for all countries. This means that we need to be planning to cut greenhouse gas emissions, not increase them. Rather than building a new coal-fired power stations, we should be investing in renewable energy! A recent report by the University of Technology Sydney shows that future energy needs can actually be met through energy efficiency measures and renewable energy - we therefore don't need any new coal-fired power stations. This is particularly the case now, as we are seeing our water supplies dwindle with the ever increasing droughts and coalfired power stations and the associated mines consume hundreds of litres of water every day - much more than the renewable technologies. I believe that all new energy should come from pollution free, renewable energy and so I absolutely object to the new plant.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted

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53	Private individual	NSW needs to take a lead on efficient, clean power, and I strongly object to my tax dollars being used to support a backwards, polluting project rather than being u to fund renewable energy options and R & D. I make a major effort to reduce my emissions footprint by subscribing to 100 percent renewable energy, switching off appliances at the outlet, purchasing efficient products, reducing auto use, etc. These efforts come at a personal financial cost and I accept this because it is my responsibility as a citizen of this planet. I expect my state government to act in a similar fashion and demonstrate responsibility and concern for future generations. Coal especially is a terrible pollutant and greenhouse gas producer. So-called carbon-capture technologies remain theoretical ? none have ever been built on an industrial scale. Renewable energy technology exists and is proven. I strongly urge that NSW take a leadership role and make a decision with future generations in mind. NSW citizens do not want another non-renewable power plant	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
54	Private individual	I totally oppose the building of a new coal fired power station, at Bayswater in the Hunter Valley, for the following reaso 1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase them. 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy. I urge you not to use coal for any future power stations in New South Wales, especially as ther are so many clean energy alternatives available to you.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
55	Private individual	Because climate change is a serious threat, we need to rapidly cut greenhouse gas emissions, not increase ther NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. We should be investing in renewable energy and creating the clean industries of the future.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
56	Private individual	. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase ther 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
57	Private individual	Coal power is a greenhouse gas emitting monster. How short sighted and environmentally irresponsible our out of touch NSW Govt is. With massive tax cre schemes about to be legislated why are we not using proven clean power generation ! I want to leave this world a better cleaner place. If this means my vote will change the Govt of this state then it will be worth it.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
58	Private individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase ther 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
59	Private individual	I appreciate your concern for the growing need of additional power stations, but what of the climate goals th Australia will need to meet by the G-20 summit? Enforcing laws to make the citizens of Australia reduce their carbon footprint is plain selfish if the Governments are not going to pull their weight and take some responsibility. Building an additional coal plant is not being a responsible government. Coal is a non-renewable resource. Eventually, when the coal supply is exhausted, the plant will be deemed useless. Why not invest in the future and construct a more sustainable power station, using the 'green' technology that has become so readily available? I suppose, the Federal Government has already abolished the solar schools scheme and the climate scheme, so what more can Australians expect from our environmentally irresponsible political officials?	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
60	Private Individual	Bayswater (MP 09-0118); Mt Piper (MP 09-0119); Munmorah (MP 09-0117) I object to the building of any new fossil fueled power stations, including the above, due to the following: 1. The impact on greenhouse gas emissions which will raise the total NSW emissions by approximately 25% when we should be achieving 25% to 40% reductions 2. The power station owners must make significant attempts to replace their polluting power stations with renewable energy such as wind, solar, geothermal, wave, etc. The Preliminary Environmental Assessments have not provided sufficient justification for the project to be approved. Therefore, it is requested that the proposals be rejected. In addition the NSW Government is requested to put legislation in place to prevent the establishment of any new fossil fueled power station without the shut-down of double the level of emissions that it will generate.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

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61	Private individual	Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase thei NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. We should be investing in renewable energy and creating the clean industries of the future. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
62	Private individual	I CANNOT BELIEVE YOU ARE GOING TO DO THIS - WHAT IS WRONG WITH OUR GOVERNMENT - I AM SO PROUD TO BE AN AUSTRALIAN AND WHEN WE ARE A COUNTRY THAT LIVES AND BREATHES THE OUTDOORS, IM UNABLE TO CONCIEVE WHY YOU THINK THE ABOVE IS AN EFFECTIVE STEP FORWARD. All new energy should come from pollution free, renewable energy - MOST CHILDREN I KNOW COULD TELL YOU 'POLITICIANS' THAT.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
63	Private individual	I implore you not to go ahead with the construction of this plant. All the scientific evidence is screaming at us that we cannot continue with the level of emissions have. We are forced to rely on elected representatives to act rationally for the benefit of the world. For the sake of all the children, please do not so this.		Objection noted
64	Private individual	I am absolutely opposed to any development of a Power station that uses coal. We must look into and use renewable energy and minimise pollution, especially greenhouse gases and emissions. You should be more focused on clean industries and addressing climate change not adding to the problem. Shame on you!!!	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
65	Private individual	Climate change will result in widespread human suffering - there is no doubt about this. Now that we have finally admitted that we have had an enormous effect or planet's once perfectly balanced climate system, we need to act morally and with great speed to make amends. The idea of creating more coal powered stations is not just immoral, it is maddness. Our children deserve nothing less than a healthy, natural and sustainable environment and the NSW Government has no right to risk our ability to live and the lives of future generations. Why wait? Sustainable industry is the only future worth developing and preserving. It is clear that WATER will be the major issue facing this country in the not too distant future - consider the effects that these Power Stations will have on our dwindling fresh water supply. And what then? Change is inevitable and those that impede the necessary sustainable action will be exposed for their greed and ignorance. Time to choose the future we want and God help us if you and your Government, Mr Rees, dont act quickly and ethically.	Chapter 7 Surface Water	Objection noted
66	Private individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase thei 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy. If this project goes ahead, you are locking us in to another 30 years of polluting coal power. Reconsideration is essential.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
67	Private individual	Governments should not be building new coal or gas powered stations but be concentrating efforts toward sustainable non polluting power sources. I find it absolu ridiculous that in these fragile environmental times, my government is considering such a plan for my state. What is the matter with you lot?	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
68	Private individual	It is frightening to think we are building more greenhouse gas emitting, water consuming coal powered power stationns when climate change is a looming threat need to invest in renewable energy.Please don't lock us in to many more years of backward looking technology.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
69	Private individua	This is terrible for climate change and also completely unnecessar	Chapter 4 Alternatives	Objection noted
70	Private individual	To build new fossil fuel power plants now is grossly irresponsibl The effects of climate change are accelerating and will be devastating. We have to curb GHG emissions immediately. All new power generation must be renewable. We already have the technology to build large scale solar thermal power with thermal storage, to refuse to use it flies in the face of common sense.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
71	Private individual	I oppose this new powerstation because 1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase them. This is a very short-sighted proposal 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. No new powerstations without carbon sequestration 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal particularly without carbon capture and storage facilities. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
72	Private individual	This is a submission in opposition to the Bayswater Power Station Extension, Application No MP 09-0118 and the Mt Piper Power Station Extension , Application MP 09-0119, both to be assessed under Part 3A Climate change is a global crisis needing urgent action and , as coal fired power stations are the single greatest threat to the climate and life on this planet, the government should be considering an immediate ban on them rather than considering two new ones. If these are approved the amount of greenhouse gas emissions in New South Wales will increase by 20% annually and will ensure the expansion of coalmining in NSW for decades to come. The government should be leading an urgent transition to renewable energy rather than considering measures that will stifle investment in these sustainable technologies for many years. Further important arguments for refusing the applications concern the deleterious effects on the environment (particularly rivers and the huge areas of land that can never be rehabilitated), the health of those unfortunate	Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG Chapter 7 Surface Water Chapter 9 Socio-Economic Section 10.1 Policy Contexts	It should be noted that if the Bayswater B project is not a coal fired option, the national and international market, and Australia's ability to export, is such that the mining industry is likely to not be affected on the basis of this project With respect to rehabilitation, post-construction all areas would be rehabilitated as set out in the EA, as would the land of immediate use after decommissioning. Other than the development footprint (as shown in the EA) no other areas of land would be disturbed or require rehabilitation

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73	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
74	Private individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase thei 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
75	Private Individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy. clean this world up!	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
76	**Climate Change Balmain-Rozelle**	***Refer to Submission (too long for spreadsheet)***	Refer Section 13.4 for separate submission responses	Objection noted
77	Private Individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase thei 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
78	Private Individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy. I don't want a dirty future, it's up to you to ensure it isn't!!!	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
79	Private Individual	Please don't lock us in to another 30 years of polluting coal powe 1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase them. 2. NSW doesn?t need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted

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80	Private Individual	As a young Australian (I am 25), I find the idea of the construction of a new base load coal or gas fire power station in Bayswater deplorable. I intend to have child in the next few years and am thoroughly concerned for their future welfare and quality of life. The construction of Bayswater B will diminish air quality in our state and contribute massive amounts of carbon dioxide to the atmosphere. The idea of erecting another coal or gas fired power station in NSW is idiotic when there are renewable options that can be examined. While these options may be more costly to develop than simply building another coal fire power station, they will create more jobs in the region and have a much smaller impact on air quality in the area (particularly for the more than 10,000 residents of Muswellbrook). In this day and age, when we are trying to reduce our carbon emissions, it would be incredibly stupid and selfish for the NSW government to approve this project. It is important to realise that the construction of Bayswater 2 endangers the lives of our Pacific Island neighbours by accelerating global warming. We have a national responsibility to reduce	Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG Chapter 7 Surface Water Chapter 9 Socio-Economic Section 10.1 Policy Contexts	NGERs and NGA are formulated by DECCW and utilised to review and assess projects in order that unacceptable levels of of CO2 are avoided. The results of these are also utilised by government to formulate policy regarding climate change and renewables.
81	Private individual	1. Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase the 2. NSW doesn't need new coal-fired power stations. A recent report by the University of Technology Sydney shows that future energy needs can be met through energy efficiency measures and renewable energy. 3. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies. 4. We should be investing in renewable energy and creating the clean industries of the future. 5. New coal plants are immoral and should be illegal. 6. All new energy should come from pollution free, renewable energy.	Chapter 4 Alternatives Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
82	Private Individual	I strongly object to the proposed new coal fired power station, Bayeswater B. The carbon emissions that would be emitted from the proposed power station a unacceptable and would directly contribute to climate change. Our lives will increasingly be adversely effected by climate change unless countries like Australia start to clean up our act. Alternative power options such as (bolt-on) solar thermal should be considered instead of coal-fired power. The time signature of the energy supplied from solar thermal power plants nicely matches the increased peak energy demand on hot summer days. The NSW government should immediately halt its plans to build more coal-fired power stations. With climate scientists calling for immediate reductions in carbon emissions, we simply can't justify increasing our emissions. Future generations will judge you on the choices you make right now. Please, for the sake of our children, halt the plans for Bayeswater B.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
83	Private Individual	I am an Australian citizen (former NSW resident) living temporarily overseas. I will return to NSW within the next year and submit the below comments on that ba for consideration. While I acknowledge the growing Australian population and the fact that that population must be 'powered'; it is my deep regret that the fuels of choice are both fossil based. As Australians, we contribute more to global carbon emissions per person than any other developed country on Earth. In a tragic twist of fate, we also stand near the front of the queue with respect to the impacts projected to come as a result of those same emissions. We each - individually and as a nation - have a moral and ethical obligation to find non-fossil solutions to the challenges before us. Renewables, conservation, efficiency or even nuclear power should be considered in lieu of the proposed fuel types for this facility. The video linked below (10 minutes) does an excellent job of quantifying the argument I submit above. http://www.youtube.com/watch?v=i-faBHqVu04 [Reviewers Note: YouTube link discusses 8 points why climate change is a moral and ethical issue and hence why	Chapter 4 Alternatives	Objection noted
84	Private Individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
85	Private Individual	Climate change is a global crisis that needs urgent actior Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; Greenhouse pollution must begin to fall immediately in NSW; New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; There must be an immediate ban on new fossil-fuelled power stations in NSW; There must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
86	Private Individual	I am in objection to the coal industries lack of concern of the environment. More coal fire stations means mo carbon dioxide in the environment = climate change = death to our planet		Objection noted

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87	Private Individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
88	Private Individual	Absolutely no new power stations powered by coal should be approved at this time. Climate change is happening and must be taken into account. Invest instea solar.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
89	Private Individual	I am writing to strongly oppose the proposed new power station at Bayswater. The earth is in a time of crisis where we have an extremely limited time to act on clin change to avoid catastrophic changes to our climate. Coal fired power stations are the single biggest threat to the climate and to life on earth. Our government has publicly stated that Australia should seek to keep global temperature increase to no greater than 2 degrees celcius. This will require an immediate moratorium on new coal fired power stations and a just transition from existing coal fired power stations to renewable energy in order to reduce atmospheric carbon dioxide emissions to less than 350ppm. Once the true impact of additional coal fired power stations are considered, it is clear that no sane person with a desire for the continuation of earth and humanity as we know it could endorse such a proposal.		Objection noted
90	**Queensland Hunter Gas Pipeline**	***Refer to Letter***	Refer Section 13.15 for separate submission response	Support noted.
91	Private Individua	None at this stage only that I object to this development and we should be comming up with better things like this all conside		Objection noted
92	Private Individual	I think it is an ill justified decision to build Bayswater B - a new base load power station. The money would be better spent putting money into solar thermal techione which can deal with base load power. Has the government truly analysed other solutions? The true cost benefit analysis of a coal fired power station versus other options has not been properly analysed. The money would be a lot better spent researching renewable technology. With enough moeny and time thie technology will also be able to provide us with base power. The decision to stick with coal power will increase NSW greenhouse gas emissions by as much as 20%. The public doesnt want this. We want the government to ge serious about climate change and start putting alot more money into renewable energy. You cannot justify the cost to the community in terms of health and environment of expanding the number of coal fired power stations. Where is the real costings of this to the community?	Chapter 4 Alternatives Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG Chapter 9 Socio-economic	Objection noted
93	**Manly Warringah Climate Action Group**	climate change is a global crisis that needs urgent actio coal fired power stations are the single greatest threat to the climate, and therefore to life on earth greenhouse pollution must begin to fall immediately in NSW new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20% there must be an immediate ban on new fossil-fuelled power stations in NSW there must be an urgent transition to renewable energy.	Refer Section 13.12 for separate submission response	Objection noted
94	Private Individual	I urge the Planning Department to more fully consider the serious and life threatening nature of increasing carbon concentrations in the atmosphere. Although I do make this submission on behalf of my government employee role, I find it ludicrous that the NSW Climate Change Department researches the dire impacts of carbon emissions upon the survival of all species, while the Planning Department goes ahead with investing in huge increases to the state's co2 output. As a concerned member of the general public, this needs to stop. I am not going to argue the finite details of this project going ahead. If fellow staff members of the NSW Government took the time to research the impacts of increasing carbon emissions there would be no question here. There is simply no time remaining to invest in future baseload power supply from coal. I urge the Planning Department to also look past gas as a long term option and fully consider the opportunities from investment in renewable energy. I urge the department to look past any perceived barriers and to consider the technologies and reports that indicate wind, solar and geothermal are viable and globally	Chapter 4 Alternatives Chapter 5 Air Quality (inc Public Health)	Objection noted
95	Private Individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
96	Private individual	I am concerned that another coal fired power station or two is as good as underway. By the way, buring gas instead doesn't put us too far ahead. In a previous le to the water minister (re the de-sal plat) I asked why the CETO, which has ZERO emission WATER and POWER was not considered. I was told it was a tender, and they were not successful. I put it to you, that we need both POWER and WATER in ever increasing quanities and a wealthy country like Australia should be leading the way since this is an Australian invention. Investment would have benefitted both Australia and the environment. There are no emmission, no fuel required, is less expensive over the life of the project by many fold than coal or gas. Can you explain why the funds used to build this blot on the landscape couldn't be used more fruitfully? At the very least, the money should be used to put solar hotwater on every roof in Sydney cutting our power needs hugely. The leftover money could be used for solar. We do not need, or want coal or gas power sttions. The only people who do seem to be the government (revenue from coal and gas), and the miners (for	Chapter 4 Alternatives	Objection noted
97	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
98	Private individua	Are you crazy?! NO MORE COAL! We need to invest in solar, wind, wave and tidal power! NOT MORE COAL	Chapter 4 Alternatives	Objection noted
99	Private individual	Obviously I'm opposed to the rapid expansion of coal-fired power stations. It's sort of in my interests, given that I'm planning to be around for the next sixty years least. My interests are survival, clean water, fresh air, food, freedom from natural disasters and the same for the other 6-7 billion people I share the planet with (especially Indigenous peoples, Pacific islanders, Sub-Saharan Africans and the rest of the Global South). Like every new coal project, this one is not going to contribute hugely to global greenhouse gas emissions. But like every new coal project, this one needs to be stopped if we are to have a snowball's chance in hell of avoiding the tipping points to runaway climate change. My bet is that you'll try to build this power station with fossil fuels regardless of the alternatives (even nothing is a better alternative to climate chaos, but there's also concentrated solar thermal, wind, PV, wave, vibration, geo, energy reduction, etc.), regardless of the costs to humanity and the biosphere and regardless of the local	Chapter 4 Alternatives	Objection noted
100	Private individual	On the latest and most reliable scientific data and modelling the use of carbon-based fossil fuels will result in the release of unacceptable levels of CO2 into the atmosphere that will drive cataclysmic climate change. The expansion of fossil fuel power in Australia is not in the best interests of our current or future populations - economically, environmentally or socially. We would like to raise the following points outlining our opposition to a coal fired power station - The choice of a fossil carbon fuel source is NOT justified because both coal and gas will increase greenhouse gases and CCS is not commercially available nor likely to be in the window of opportunity we have to reduce our CO2 emissions before climate change tipping points occur. - Bayswater PS is located in an inland water catchment area reliant on rainfall that is likely to be affected by future climate change. Food security and irrigation water for agriculture is of far more importance than expanding centralised power facilities. - The claim that there is already sufficient water available from the Hunter River/Glenbawn Dam system to supply all future needs is an assumption especially in the close to shutting down the existing Bayswater PS down in the 2005/2007 drought. - The actual water usage in a ?Pulverised Coal Fired Ultra Supercritical Thermal technology? is assumed and far from proven. - This proposal does not allow for externalities in the mining and washing of the coal needed for the production of the ?Pulverised Coal? or to operate a ?dry fired? - A ?Dry-Fired? power plant produces unacceptably more (5%) C02 emissions than the existing power plants. Carbon Capture and Storage (CCS) is estimated to i by around 18%. - Centralising power sources at Bayswater actually decreases power security. It will be vulnerable to both future WATER SHORTAGES and possible terrorist attac - Base load power generation can be supplied by renewable power systems that are currently in operation and under development. Such as in Spain (Andasol), Ca 2000 MW Ordos solar farm in China all capable of providing base load. - The Hunter is an excellent regional site for a range of renewable technologies from Wind to Geothermal - The EA ignores many externalities particularly the impact on the Hunter River system. Energy production is a major driver of climate change and conversely clima systems and resources both quantity and quality. Any decision cannot afford to take a ?silo based? approach that will result in perverse conflicts that will further ex	Chapter 4 Alternatives Chapter 7 Surface Water Chapter 9 Socio-economic Section 10.1 Policy Contexts	NGERs and NGA are formulated by DECCW and utilised to review and assess projects in order that unacceptable levels of of CO2 are avoided. The results of these are also utilised by government to formulate policy regarding climate change and renewables. It should be noted that coal mining operations are assessed and regulated under their own consent conditions and Environmental Protection Licenses
101	Private individual	climate change is a global crisis that needs urgent action; I am emotionally deeply conce coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; There must be a interest in renewable energy with pride there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy. Pleae notify what action will be taken to help resolve?	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
102	Private individual	In this age of moving towards green energy I do not agree with the set up of this power station. I think that we need to encourage sustainable power that contribute a future beyond this generation and show the youth of today that we care about their future.		Objection noted
103	Private individual	I am totally opposed to any more coal fired power stations in NSW. The NSW Government should be approving only power generating projects that are more environmentally responsible.	Chapter 4 Alternatives Section 10.1 Policy Contexts	With regard to levies, further ifnormation on the CPRS can be found at: http://www.climatechange.gov.au/en/government/initiatives/cprs.aspx
104	Private individual	We are in unqualified opposition to any new fossil fuel power plants. All new plants must be carbon neutral which effectively means renewables at this time. support a progressive and universal environmental levy on energy to build and continue to advance this technology. We are informed of the science of climate change and the devastating effects on life. These developments are unjustifiable. As such, no new fossil fuel plants will be built without our bodies being put in the way of such irresponsible and outmoded developments.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
105	Private individual	All new energy should come from pollution free, renewable energy	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
106	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
107	Private individual	This is a time when we need to radically cut our carbon emissions and invest all our energy in alternative energy sources, building new coal fired power statio should not even be an pursuable option. Coal is not the answer.	Chapter 4 Alternatives	Objection noted
108	**Hunter Valley Water Users Association**	***Refer to Letter [Email is direct copy of letter - #179]***	Refer Section 13.9 for separate response	Objection noted
109	Private individua	Please stop burning coal to produce electricity. I object to the development of new coal fired power plan		Objection noted
110	Private individual	This is a submission AGAINST this proposed project. Coal is a root cause of climate change and it is completely irresponsible, unnecessary and utterly dangero for this project to proceed. NSW can and must invest in renewable energy to make the urgent transition to the clean, sustainable economy that we need, with quality green jobs for our communities.	Section 10.1 Policy Contexts	Objection noted
111	**Climate Action Newcastle**	***Refer to Letter***	Refer Section 13.3 for separate response	Objection noted
112	**Wollongong Climate Action Network**	***Refer to Letter***	Refer Section 13.17 for separate response	Objection noted
113	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
114	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there are demand management and alternative supply options to provide for future energy needs in NSW - the new coal fired plants are unnecessary; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
115	Private individual	?climate change is a global crisis that needs urgent actior ?coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; ?greenhouse pollution must begin to fall immediately in NSW; ?new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; ?there must be an immediate ban on new fossil-fuelled power stations in NSW; ?there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
116	Private individual	We don't need more coal fired power stations, what we need is a just transition to a renewable energy platform which will provide green jobs, a healthy and s environment and community and a long term solution to energy needs. Expanding coal fired power is dangerous and old fashioned.	Chapter 4 Alternatives	Objection noted
117	Private individual	It is very alarming that another coal fired power station is given consideration while in this crucial time carbon emissions must be reduced. The tipping point is n and its no time to be gambling away the future of the planet. The time is right to be funding sustainable renewable energy sources. It is proven that solar thermal derived energy can meet base power needs so lets take the country down that bright path not more fossil fuel energy which is going to damage the planet and destroy or displace entire populations.	Chapter 4 AlternativesChapter 5 Air Quality (inc Public Health)	Objection noted
118	Private individual	It is absurd to go ahead with new coal power stations. We are so much smarter than this. There are so many alternatives to just diving back into the same old patte of disregard for our planet and it's people and care for the dollar and the dollar alone. It is so absurd. I cannot believe that this is the best option for the future of our energy demands and for the future of our children.		Objection noted
119	Private individual	Coal fired power stations are Australia's single biggest source of greenhouse pollution ? fuelling dangerous climate chang The two proposed new coal fired power stations in NSW (one at Bayswater in the Hunter Valley and one at Mt Piper near Lithgow) would increase NSW annual greenhouse pollution by up to 20%. There?s enough science showing us the impacts that emission are having on our environment. I won?t make a list or formulate a scientific argument here, we?ve all read, heard, talked about climate change science a million times over. Whatever percentage increase of CO2 emissions, whatever the degrees of warming our CO2 producing activities will result in, we know that this is a treat to our climate: our future. The technology and the renewable recourses are available to make the shift from coal and develop other ways of sourcing our power. The technology is available. What is lacking is the investment in green technology, action and the urgency from our government. The building of new power stations at Bayswater and Mt Piper would drive an expansion of existing coal mines, and push to open new coal mines in NSW. They wi	Chapter 4 Alternatives Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
120	**Beyond Zero Emissions**	The NSW government is utterly out of step with the biggest challenge that this planet has to tackle globally, the challenge of reducing our carbon emissions to z and then going further and drawing down carbon from the atmosphere. The idea of erecting another coal-fired power plant (the worst emitting power source of current power supplies) is completely irresponsible. It is increasing the size of the job that the future generations and our generation already has in reducing our carbon emissions. It is already agreed that reducing carbon dioxide emissions is necessary to give our planet a fighting chance in avoiding dangerous climate change - building another high emitter should be considered criminal neglect of your duties. We have the best solar renewable resource of any nation in the world - that is where we should be sourcing our power stations of the future. Our wind resource is also impressive, utilising geo-thermal and wave and tidal sources should also be our priority. Stop pandering to the fossil fuel lobby and start caring for all of ours' future. Say NO to any new coal powered plant, simple.	Chapter 4 Alternatives	Objection noted
121	**Hunter Environment Lobby Inc.**	***Refer to Letter***	Refer Section 13.8 for separate response	Objection noted
122	Private individual	I object to this proposal! ?climate change is a global crisis that needs urgent action; ?coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; ?greenhouse pollution must begin to fall immediately in NSW; ?new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution; ?there must be an immediate ban on new fossil-fuelled power stations in NSW; ?there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
123	Private individual	as discussed I had difficulty with the online form. My comments regarding the proposal on exhibition follow: I oppose the proposal on the following grounds: 1. I do not support the proposal for additional baseload power for NSW based on the proposed use of either black coal or natural gas. Both of these would contribute to greenhouse gas pollution within NSW. Any additional baseload power should be sought from no/ low carbon technologies and derived from renewable sources. 2. The need for additional baseload power has not been demonstrated. The NSW Government should be investing in reducing the demand for energy through energy efficiency projects and alternatives such as decentralised power sources that rely on renewable energy. 3. The proposal is inconsistent with NSW policy as it would contribute to an increase in greenhouse gases in NSW and therefore be counter to efforts to prevent the impacts of dangerous climate change.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
124	**Dissenting Members of Muswellbrook Shire Council Environment Committee.**	***Refer to Letter***	Refer Section 12.2 for separate response	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
125	Private individual	We don't need new coal but more money for renewable energy sources. Coal fired power stations are the single greatest threat to the climate, and therefore to life earth. Stop building them! Greenhouse emissions must fall. New coal-fired power stations would increase NSW greenhouse pollution by 20%; We need a ban on new fossil-fuelled power stations.	Chapter 4 Alternatives Chapter 6 GHG	Objection noted
126	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
127	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy. Its incredible to think that in this day and age of looming climate catastrophe, and with the incredible opportunities posed by renewable energy, we are still looking to expand coal-based power facilities. The NSW government needs to stop listening to the coal lobby, start listening to the people, and get serious on climate change.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
128	Private individual	Thank you for the opportunity to make a personal submission in regards to this proposa The NSW state government says it supports a lowering of the state's Greenhouse Gas Emissions. How can this be reconciled with expanding a facility that produces a single digit percentage of the state's current emissions and will do so for at least 30 years (up to about 50 years) into the future if expanded ? All new (or augmented) electricity generating capacity MUST be based on renewable low or no greenhouse gas emissions-based technologies in order for our state to address climate change on a reasonable timeline. Effect on climate must be a key determining factor in any decision on new or augmented electricity generation. As coal-fired power doesn't produce many new jobs and renewable energy produces a comparable number of jobs, renewable energy production is roughly equiva on the jobs production criteria to coal. Due to extensive mechanisation and bulk handling practices, the extraction and transport of coal no long provides anything like the number of jobs it once did. Despite huge increases in coal export tonnage (as well as some additional domestic usage), I'm told that the number of jobs in coal extraction and transport has fallen in th	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
129	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
130	Private individual	My god! How can you possibly be considering approval of brand new coal-powered power stations just as Copenhagen and Federal government's CPRS get goir You really have your heads stuck down a huge coal mine. I'll be on the barricades in the Hunter any time its needed to stop such folly!!		Objection noted
131	Private individual	Building new high pollution coal-fired power stations is madness when the science says 350 parts per million (CO2 in the atmosphere) should be the target and economists say the costs of future mitigation exceed the costs of acting now. The fact that other countries continue to build coal-fired power stations does not make right. It is a failure of the political process. Leave the coal in the ground as the planet will need it come the next ice age, if we are around for that long. Put the resources into increasing energy efficiency.	Chapter 4 Alternatives	Objection noted
132	Private individual	climate change is a global crisis that needs urgent actior coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; greenhouse pollution must begin to fall immediately in NSW; new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; there must be an immediate ban on new fossil-fuelled power stations in NSW; there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
133	Private individual	Establishing new coal or gas fired electricity plants is unneccessary in that it would likely represent a greater monetary cost to the NSW government over the long term in that future Federal legislation could potentially result in the closure of the plant or employment of the plant at less than full capacity. Furthermore; global warming and ocean acifidication represent significant threats to the environment and humanity, making such plants highly undesirable. Lastly, coal or gas fired power plants such as that planned at Bayswater threaten the ability of future generations to enjoy equal (or improved) living standards relative to the present generations that they rely upon non-renewable resources and as they represent a threat to the global environment in the ways previously mentioned.	Chapter 4 Alternatives	This is a speculative outcome and there is no reason to suggest that the power station would be affected to such a degree by the CPRS
134	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
135	Private individual	I heartily disagree with this project, why are we creating more co2 in the atmosphere, when we're supposed to be reducing. We need to save the climate, the pla and ourselves. Please reconsider.		Objection noted
136	Private individual	New coal fired power stations should not be built as they contribute excessively to greenhouse gas emissior Future electricity needs should be met with renewable energy power stations.	Chapter 4 Alternatives Chapter 6 GHG	Objection noted
137	Private individual	We urgently need to cease building more coal fired infrastructure and put the money and resources in sustainable power/renewable energy sources.	Chapter 4 Alternatives	Objection noted
138	Private individual	I am emailing to express my concern at the proposed coal fired base load power station at Bayswate Climate Change is an acknowledged threat to humanity and the need to reduce global emissions is recognised by world leaders as essential to avoid dangerous climate change. Australia can ill afford to continue to build new coal fired power plants; which risk being moth balled within 10 years. The world will not tolerate new fired power stations without carbon capture and storage. An alternative would be a gas fired power station until the CCS technology is developed. Please do not approve this development. It is unacceptable, when Australia can not afford to let its carbon emissions continue to grow.		The mothballing of the plant in 10 years is a speculative outcome and there is no reason to suggest that the power station would be affected to such a degree by the CPRS
139	**Jamberoo FutureCare**	The members of Jamberoo FutureCare would like to express their objection to the proposed Bayswater power statio We are a community group with the focus of sustainable living and empowering individuals to reduce their energy consumption and switch to green energy. Fossil fuel power stations, especially coal, are the greatest threat to our climate. We have it within our power to stop this crude, out of date form of power production. The move to renewables are a necessity for future generations and for the health of our planet. Only when we adopt renewables as the way forward can serious investment, research and development begin to address our climate crisis. How can we hope to reduce CO2 emissions when more fossil fuel power stations are being proposed. We urge you to place an immediate ban on all new fossil fuel power stations in NSW.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
140	Private individual	It is no longer possible for responsible governments, companies or individuals to build new coal fired power plants in Australia. To go ahead with fossil fuel electri in the face of global warming is to harm our children, our economy and the basis of our continued ability to live on this planet. This proposal is short sighted, ignores the science of climate change and should be declined.		Objection noted
141	Private individual	If the NSW government attempts to build new fossil fuel power stations i will, standing along side thousands of others, do everything i can to peacefully stop them. fossil fuel age is over.		Objection noted
142	Duplicate	Duplicate		
143	Private individual	* climate change is a global crisis that needs urgent action; * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy, including solar/thermal, solar/wind, solar/hydrogen. Fossil-fuelled power stations must become obsolete in order to help combat climate change and for society to become sustainable.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
144	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

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145	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
146	Private individual	It is time we started to find other avenues to energy. These coal plants are not protecting jobs, many jobs can be created in the Newcastle region through the use developing environmentally efficient technologies and production lines	Chapter 4 Alternatives Chapter 9 Socio-economic	Objection noted
147	**AidWatch**	AidWatch is an NGO that monitors the impact of Australian government programs and decisions on peoples living in low income societies. This proposal for a new fossil fuel-fired power plant will significantly increase green-house gas emissions and will have a direct negative impact on impoverished peoples across the world. As recognised by the United Nations, climate change is having direct and measurable impacts on anyone who relies for their livelihood on marginal lands. Ninety-nine percent of the people who will lose access to food and shelter as a result of climate change live in the world's poorest societies. The NSW Government Minister who decides to proceed with this new fossil-fuel power station, and their civil servants who implement the decision, will be doing so in full knowledge of the direct impacts of the resulting carbon emissions on the poorest people today, and of future generations tomorrow. A decision to open such a power plant, given our knowledge of its impacts, is tantamount to an international climate crime: it is pre-meditated and done in the full knowledge of its impacts, from livelihoods lost, to numbers of people displaced, to likely deaths. There is no justification for such criminal negligence: the proposed Bayswater B plant must be scrapped and replaced by a combination of renewable sources, ene Instead of approving a program of new or expanded fossil-fuel fired power stations, the NSW Government should be decommissioning its existing coal-fired power signals a profound dereliction of the duty of government to care for us, the people, and our future generations.	Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG	Objection noted
148	**Carbon Reduction Institute**	It is ridiculous to be considering new coal power plants in NSW These proposed power plants go against all action that has been taken by the NSW government to date to reduce greenhouse gas emissions of the state. Any new power stations built in NSW must be sustainable, and neither gas or coal are sustainable sources of energy. Stop this folly and put a moratorium on new coal plants in NSW. Renewable energy sources have been massively overlooked and underfunded in NSW.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
149	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy. Australia has plenty of sun, wind and water to create power.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
150	**Greenpeace**	Greenpeace welcomes the opportunity to comment on the Preliminary Environmental Assessment for the proposed new power station, Bayswater B. Our submiss is attached. We think that the proposal should be rejected on the grounds that an additional 12 million tonnes of CO2-e/annum of greenhouse emissions is unacceptable. In addition, we do not believe there is a strategic justification for this expansion and we do not believe that the proponent has exhausted all available options before considering this project. A recent analysis of projected power growth needs in NSW , (subsequent to the Owen inquiry projections used by the proponent), shows that a range of ?green energy? options combined with energy efficiency measures would still leave NSW with surplus power at 2019/2020. Climate change is an extremely serious and urgent problem. According to the IPCC, global emissions must peak by 2000-2015 and stabilise at 450ppm to have a roughly 50/50 chance of avoiding a global temperature increase of 2oC over pre-industrial levels . The observations in the natural world exceed even the worst case IPCC forecasts, which should lead policy makers to mandate urgent greenhouse reductions. Greenpeace is of the firm belief that it is no longer morally or scientifically acceptable to build new coal plants or new base-load gas. All new energy should be pollu In the interests of the NSW community and indeed the world community, this project should be rejected. In fact, if the project is approved as coal, it is highly likely that many from the community would try to physically stop construction by engaging in civil disobedience	Refer Section 13.7 for seaprate response	Objection noted
151	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy. * locking in the emissions of a new coal or gas fired power stations for 20, 30 or 50 years is totally contrary to the Government's stated concerns about climate change and is absolute hypocrisy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
152	**The New School [Not Old School] Collective**	***Refer to Letter***	Refer Section 13.16 for separate response	Objection noted
153	Private individual	I oppose the construction of new coal or baseload gas power stations on the grounds that they will result in an increase in greenhouse gas emissions. All new energy should be renewable and we should begin replacing the existing stock of fossil fuel power stations with renewable energy as soon as humanly possible.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
154	**Rising Tide Newcastle**	***Refer to Letter***		Objection noted
155	**DECCW**	***Refer to Letter***	Refer Section 11.1 for seaprate response	
156	**Total Environment Centre**	***Refer to Letter***		Objection noted
157	**City of Sydney**	***Refer to Letter***	Refer Section 12.4 for separate response	
158	Private individual	I am astonished that such a proposal is even on public exhibition. There is no place for new coal-fired power stations at this point in history - none whatsoever. It make a major contribution to climate change and undermine any other measures that might be taken by Australian Governments to otherwise curtail it over the next decade. The science is unequivocal - climate change will lead to mass extinctions of species and ecosystems and dramatic impacts on human communities across the globe, especially the poorest, unless dramatic, urgent and far-reaching action is taken now. Greenhouse gas emissions in NSW, and throughout the world, need to peak now and begin to fall immediately on a rapid downward trajectory. The approval of new power stations prevents that and puts the future of the entire planet at risk. We need to make a transition to renewable energy now. The time for talking and fudging and fiddling around at the edges is long gone - action is needed now. Please do not approve this power station. The vast majority of the community is opposed to it, and it represents the most serious risk imaginable to the future of this	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
159	Private individual	This is an objection to the proposal for a coal or gas fired power station in NSW (Bayswater B) / Mt Piper Lithgo On the latest and most reliable scientific data and modelling the use of carbon-based fossil fuels will result in the release of unacceptable levels of CO2 into the atmosphere that will drive cataclysmic climate change. The expansion of fossil fuel power in Australia is not in the best interests of our current or future populations - economically, environmentally or socially. We would like to raise the following points outlining our opposition to a coal fired power station - The choice of a fossil carbon fuel source is NOT justified because both coal and gas will increase greenhouse gases and CCS is not commercially available nor likely to be in the window of opportunity we have to reduce our CO2 emissions before climate change tipping points occur. - Bayswater (Mt Piper) PS is located in an inland water catchment area reliant on rainfall that is likely to be affected by future climate change. Food security and irrigation water for agriculture is of far more importance than expanding centralised power facilities. - The claim that there is already sufficient water available from the Hunter River/Glenbawn Dam system (Coxes River) to supply all future needs is an assumption that came close to shutting down the existing power station down in the 2005/2007 drought. - The actual water usage in a ?Pulverised Coal Fired Ultra Supercritical Thermal technology? is assumed and far from proven.	Chapter 4 Alternatives Chapter 7 Surface Water Chapter 9 Socio-economic Section 10.1 Policy Contexts	Objections noted. It is noted that decentralised power facilities would stimulate regional towns - this may be true as any development has the benefit of stimulating local economies. However, power facilities are subject to long distance transmission losses (refer Chapter 4 Alternatives).
160	Private individual	COAL POWER IS NOT HELPING OUR CURRENT ENVIRONMENTAL CRISIS, BUILDING NEW POWER STATIONS IS ONLY FEEDING THE PROBLEM! The Australian Government should not be supporting this industry, the time and money you invested in the Fossil Fuel industry would be better spent on developing new, cleaner renewable technologies. The thought that the government is supporting such a development makes me sick...think of the consequences now and in the future! I object to any new Coal or Gas fueled power plants. Come on Mr. Rudd how can you support this??!!!	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
161	Private individua	***Refer to letter (+ note '161 additional' info)***	Chpaters 4 to 8	Objection noted
162	**LIVE**	After decades of warnings, the climate experts (thousands of scientists working across many fields) are now telling us that climate change is an even more dea threat than they had suspected. To address climate change in the short time available will require urgent international action. As arguably the greatest single contributor to the rising greenhouse gases causing climate change, ALL coal fired electricity generation must halt. It defies all rational thought (read BARKING MAD!) for NSW to now be considering new coal OR gas fired power stations which would drastically increase greenhouse gas pollution in Australia. Meanwhile, renewable energy and energy efficiency technologies are available here and now and will create many more and more sustainable jobs, which for both social and ecological reasons must be all governments' priority.	Chpater 6 GHG Chapter 9 Socio-economic Section 10.1 Policy Contexts	Objection noted

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163	**Greens NSW**	***Refer to Letter***	Refer Section 11.5 for separate response	Objection noted
164	**Muswellbrook Shire Council**	***Refer to Letter***	Refer Section 12.1 for seaprate response	
165	**Bellingen Environment Centre**	The Bellingen Environment Centre would like to make a submission against new fossil fuel power stations at Bayswa We represent a network of 200 strong environmentally minded people from the Bellingen Shire and believe that coal fired power stations are the single greatest threat to the climate, and therefore, to life on earth. Greenhouse pollution must begin to fall immediately in NSW if we are to reduce the carbon in our atmosphere to a safe level as dictated by the world's leading scientists – 350 ppm. New coal or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20% - further jeopardising life on Earth. The atmospheric carbon levels are currently at 388 ppm and we urgently need to start reducing our impact, not increasing it! We ask for an immediate ban on new fossil-fuelled power stations in NSW to prevent short-sighted and dangerous energy solutions such as this.	Refer Section 13.1 for separate response	Objection noted
166	Private individual	Climate change is a global crisis that needs urgent action. The coal fired power stations are the single greatest threat to the climate, and therefore to life on eart We need greenhouse pollution to fall immediately in NSW. New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%. Transition to renewable energy is imperative to o future.	Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
167	Private individual	* climate change is a global crisis that needs urgent attentio * fossil fuel fired power stations are a major contributor to climate change * new coal- or gas-fired power stations would drastically increase the greenhouse pollution of NSW * for these reasons I strongly oppose any further investment in new fossil-fuelled power stations in NSW * NSW must make the transition to renewable energy * As this is required globally, NSW stands to benefit greatly by leading the way.	Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
168	Private individual	* climate change is a global crisis that needs urgent attentio * coal fired power stations are the single greatest threat to the climate, and therefore life on earth * greenhouse pollution must begin to fall immediately in NSW * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 50% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy!	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
169	Private individual	I'm writing in regard to the proposed addition of two new coal fired power stations in NSW The impact that this development would have on the environment is atrocious. Annual greenhouse pollution would increase by 20%, having a major impact on climate change, which is already driving species to extinction and killing an estimated 300,000 people per year. How can you stand by and accept these statistics without taking action?!! Greenhouse pollution must begin to fall immediately in NSW, steps must be taken to prevent further damage to our earth, we only have one. It's time to wake up to climate crisis and scrap these outrageous proposals. Rather than presenting proposals to do more harm to our earth, we should all be working together to find a way to preserve our planet, including this amazing and wonderfully diverse Australian land.	Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG	Objection noted
170	Private individual	I am writing in regard to the concerns of climate change being a global crisis which calls for urgent actic Coal fired power stations are the single greatest threat to the climate and so – life. It is a must that greenhouse pollution must begin to fall immediately in NSW. New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%. An immediate ban must be placed on new fossil-fuelled power stations in NSW. Also an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
171	Private individual	The proposal of two new coal fired power stations is a horrendous, out-dated concept, hard to believe. These types of power stations are the single greatest threat the climate, and therefore to life on earth. Please take urgent action for renewable energy solutions.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
172	Private individual	* climate change is a global crisis that needs urgent action both locally and internationa * coal fired power stations are the single greatest threat to the climate, and therefore to all life on earth * greenhouse pollution must begin to fall immediately in NSW * new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
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174	Private individual	I am concerned that climate change is a global crisis that needs urgent attentior It is necessary immediately for greenhouse pollution to fall in NSW. Coal fired power stations are the single greatest threat to the climate, and therefore life on this planet. New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%. There must be an immediate ban on new fossil-fuelled power stations in NSW. There must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
175	Private individual	I submit that climate change is a global crisis that needs urgent action. Coal fired stations are a threat to life on earth. There must be an immediate ban of new fossil fuelled power stations in NSW.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
176	Private individual	I do not support the current proposal to expand coal or gas fired power generation in NSW. We should be investing in renewable energy and creating the cle industries of the future. All new energy should come from pollution free, renewable energy. Bayswater B could lock NSW into another 30 years of polluting coal power. Bayswater B will exacerbate environmental and human health issues in the Upper Hunter due to increased air and water pollution. A new coal-fired power station and associated mines will consume more of our precious and dwindling water supplies. New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%. There is no detail on dust emissions and cumulative metalloid, fluoride and acidic deposition in the Upper Hunter. A similar analysis should be provided for a Solar-Thermal option noting the viability of 250 MW solar-thermal stations and solar electricity storage.	Chapter 4 Alternatives Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
177	**Marrickville Council**	***Refer to Letter***	Refer Section 12.5 for separate reponse	Objection noted
178	Private individual	I am writing to express my objections to the planned Bayswater B power station. My reasons for objecting a * The planned fossil fuel power station will release millions of tonnes of greenhouse gases into the atmosphere annually at maximum capacity. * Carbon capture and storage is impractical and unproven and is really just propaganda to try to give people false hope. * Australia should be shutting down fossil fuelled power stations not building new ones. * New power stations should be non polluting (even nuclear is better) if the world is to be saved from the fast approaching climate catastrophe.	Chapter 4 Alternatives Chapter 6 GHG	Objection noted
179	Duplicate	Duplicate		
180	Private individual	I do not support the current proposal to expand coal or gas fired power generation in NSW. We should be investing in renewable energy and creating the cle industries of the future. All new energy should come from pollution free, renewable energy. Bayswater B could lock NSW into another 30 years of polluting coal power. Bayswater B will exacerbate environmental and human health issues in the Upper Hunter due to increased air and water pollution. A new coal-fired power station and associated mines will consume more of our precious and dwindling water supplies. New coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%. There is no detail on dust emissions and cumulative metalloid, fluoride and acidic deposition in the Upper Hunter. A similar analysis should be provided for a Solar-Thermal option noting the viability of 250 MW solar-thermal stations and solar electricity storage.	Chapter 4 Alternatives Chapter 5 Air Quality (inc Public Health) Chapter 6 GHG Chapter 7 Surface Water Section 10.1 Policy Contexts	Objection noted
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218	Private individual	I am writing to you to express my opposition to the proposed Bayswater fossil fuel powered power static Regardless of the debates on the severity of how our excessive use of resources is affecting the planet for future generations, it can be argued that something must be done to avoid: * future generations running out of resources * future generations living in a polluted much-less-than-quality world * avoiding the consequences of climate change on our environment and us. The fact that Australia is planning to introduce 2 new power stations communicates that the Australian Government has no commitment to be part of the global effort towards sustainability. In fact these new stations will increase greenhouse pollution by as much as 20%, this is absurd and communicates to me that the Australian Government does not care about future generations or the world. As a young person living in a country run by older generations I feel like a child whose parents are not only happy to see their youth die but actually assist to make it	Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
219	Private individual	I have grave concerns relating to the current proposal to build two new fossil fuel powered power stations at Bayswater and Mt Piper. How will these stations aff the serious attempts of wide sections of the Australian, and indeed global, populations to act to prevent the development of climate change. You have a duty and responsibility, both legal and moral, to act in the interests of these people. I urge you to reconsider the proposed power plants.	Section 10.1 Policy Contexts	Objection noted
220	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the most dirty and greatest threat to the climate and therefore all life and eco-systems on earth * Your failure to act – makes you responsible and … greenhouse pollution must begin to fall immediately * the proposed sites for new power stations would drastically increase NSW greenhouse pollution * there must be an immediate ban on new fossil fuel power stations in NSW * there must be an immediate and huge investment in renewable energies.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
221	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; * greenhouse pollution must begin to fall immediately in NSW; * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW; * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
222	Private individual	I submit that greenhouse pollution must fall immediately in NSW, and that building new coal fired power stations are the greatest threat to the earth, espec vulnerable peoples.	Section 10.1 Policy Contexts	Objection noted

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223	Private individual	I would rather see money spent on other more environmentally friendly forms of energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
224	Private individual	* climate change is a global crisis that needs urgent actior * coal fired power stations are a very significant, priority threat to climate stability; and therefore to the ecosystems that sustain the economic and social wellbeing of all people. * NSW's greenhouse gas emissions are unacceptably high and must begin to fall immediately * The planned new coal or gas fired power stations would dramatically increase NSW's greenhouse gas pollution levels. * These stations present an unacceptable risk to the NSW community and beyond, and an immediate ban on new fossil fuelled power stations is NSW should be made to prevent this risk * An urgent transition to renewable energy sources – primarily solar and wind power is required to reduce the negative costs of climate change; and etter position the NSW economy into the future	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
225	Private individual	* climate change is an urgent crisis that demands real actio * coal fired power stations are the single greatest threat to the climate, and therefore life on earth * we must transition to renewable energy in order to tackle greenhouse pollution	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
226	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the single greatest threat to the climate, and therefore life on earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
227	Private individual	I submit that climate change is now a global emergency that requires urgent action from government. The planned new coal or gas fired power station would increase NSW greenhouse pollution by as much as 20% and contribute to an unsustainable rise in carbon emissions. I call on the NSW government to enact an immediate ban on fossil-fuelled power stations and make the transition to renewable energy and green technology jobs.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
228	Private individual	Have we not been unconscious for long enough' We must stop destroying life – all life! This is a submission against the proposed fossil fuel station at Bayswater. We must create a New Earth.		Objection noted
229	Private individual	I submit that climate change is a global crisis that needs urgent action, and coal fired power stations are the single greatest threat to the climate, and therefore to on earth. The planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%. I propose that there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
230	Private individual	Climate change is a global crisis that needs urgent action. While ever we continue to use fossil fuel in order to power our station we decrease the need to investigate alternative methods of power supply. We need to develop the use of renewable energy and decrease the impact on climate change. This issue is increasingly important for future generations.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
231	Private individual	I submit that coal fired power stations contribute to climate change and may cause damage to many people and ecosystems throughout Australia and the world. Renewable energy options are available NOW and must be utilised to prevent further climate change. Forward thinking planners will recognise this.	Chapter 4 Alternatives	Objection noted
232	Private individual	I submit that first how thermodynamic says that energy can not be created or destroyed only transformed from 1 form to another, therefore climate change is no possibility but a law of physics that is occurring. I propose that the human race is smarter and can do better than just dig up coal. Australians are smarter stand up and be seen as the first political party in Australia that actually did something and not just paid lip service to climate change and green energy. You are Australians and you are smarter if you just stand up and acknowledge the facts and stand up against the companies which are not fighting for the sustainability cause. It's all possible.		Objection noted

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233	Private individual	Greenhouse pollution must begin to fall immediately in NSW. The creation of new fossil fuel power stations in NSW is counter productive to our need to overcor climate change and build on our renewable energy industry.	Section 10.1 Policy Contexts	Objection noted
234	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the single greatest threat to the climate and therefore to life on earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
235	Private individual	* climate change is a global crisis that needs urgent actio * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
236	Private individual	I believe there must be an immediate ban on new fossil fuelled power stations in NSW.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
237	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
238	Private individual	* climate change is a global crisis that needs urgent attentio * coal fired power stations are the single greatest threat to the climate, and therefore to the earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
239	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the single greatest threat to the climate and therefore life on earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
240	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the single greatest threat to the climate, and therefore to life on earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
241	Private individual	I am writing to object to the construction of new coal-fired power plants at Bayswater and Mt Piper. At a time when global warming has been recognised as a seri threat to humanity and the planet, and when world leaders are trying to organise a substantial global reduction in greenhouse emissions, it is frankly astonishing that any government official would even consider approving such a project. This is a backward and dangerous step. All government focus should be upon developing sustainable and renewable energy sources. Seriously – what are you guys thinking? Have you been paying any attention to anything over the past ten years? Let's be sensible for a minute.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
242	Private individual	I write to object to the coal fuel power stations at Bayswater and Mt Piper and request that non-fossil fuelled non nuclear, renewable energy alternatives be investe and supported by the Department of Planning NSW.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted

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243	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are a huge threat to the climate and planet * greenhouse pollution needs to fall immediately in NSW and Australia * the planned new coal- or gas-fired power stations would increase NSW greenhouse pollution by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * time, research and money must be put into implementing renewable energy solutions ASAP.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
244	Private individual	* climate change is a global crisis that needs urgent actio * coal fired power stations are the single greatest threat to the climate and therefore life on earth * greenhouse pollution must begin to fall immediately in NSW * the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20% * there must be an immediate ban on new fossil-fuelled power stations in NSW * there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
245	Private individual	Climate change is a global crisis that needs urgent action. While ever we continue to use fossil fuel in order to power our station we decrease the need to investigate alternative methods of power supply. We need to develop the use of renewable energy and decrease the impact on climate change. This issue is increasingly important for future generations.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
246	Private individual	This is a submission regarding and against fossil fuel powered power stations at Bayswater and Mt Piper. As climate change is a global crisis which needs to be addressed and urgent action needs to be taken. Coal fire power stations are the single greatest threat to the climate – the planned new coal or gas fired power stations would drastically increase NSW greenhouse pollution by as much as 20%. There must be an urgent transition to renewable energy.	Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
247	Private individual	I submit that climate change is a global crisis that needs urgent attention, and that there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
248	Private individua	I against new coal power stations at Bayswater and Mt Piper. Invest in renewable energy source	Chapter 4 Alternatives	Objection noted
249	**NSW Health - Hunter New England**	***Refer to Letter***	Refer to Section 11.2 for separate response	
250	**Singleton Shire Healthy Environment Group**	***Refer to Letter***	Chapter 5 Air Quality (inc Public Health)	Objection noted
251	Private individual	There must an urgent transition to renewable energy The proposed fossil fuelled power station at Bayswater presents a significant step in opposition to the required transition to renewable energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
252	Private individual	I submit that coal fired power stations are the single greatest threat to the climate and therefore to life on earth. My children (and consequently their children) will affected both personally and environmentally by the proposed plan. This along with the detrimental effects it will have on the wildlife surrounding the area are a horrible thought. There must be an urgent transition to renewable energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted
253	Private individual	I can't believe the NSW government is seriously considering this! Coal fired power station is madness! As James Hansen, NASA scientist, has said, coal fired power stations are factories of death. We don't need this; renewable energy is the way of the future, and the Hunter is one of the most ideal places to grow it – please some vision, some chutzpah, some resolve and stand up to the coal companies and do not approve these projects.	Chapter 4 Alternatives	Objection noted
254	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
255	Private individual	Climate change is a global crisis that needs urgent attention. There must be an immediate ban on new fossil fuelled power stations in NSW	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objection noted
256	Private individual	I submit that we should not have two new fossil fuel powered power stations at Bayswater and Mt Piper. I submit that there must be an urgent transition to renew energy to keep co2 levels to 350ppm	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objection noted

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
257	Duplicate	Duplicate		
258	Private individual	We should be taking positive action to reverse the threat of climate change instead of planning to drastically increase greenhouse pollution with these new pov stations. We should ban new fossil powered power stations in NSW. We should be planning to invest in renewable energy sources. We should think of the future for our children	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
259	Private individual	Renewable energy is what the electorate wants - not more contributions to co2 emissions To reduce global warming to the scientifically safe level of 350ppm we do not want more coal powered dirty energy	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
260	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned power stations will drastically increase NSW greenhouse pollution • there must be an immediate ban on new fossil-fuelled power stations in NSW; • the NSW government must invest and support renewable energy	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
261	Private individual	I am really concerned about this proposal and totally opposed to them. They increase our reliance on coal at a time when we should be reducing this reliance in or to reduce the production of green house gases. I urge you to ban any development of new fossil fuel based power stations	Section 10.1 Policy Contexts	Objections noted.
262	Private individual	I wish to submit that new fossil fueled power stations at Bayswater and Mt Piper should not be bu We desperately need to reduce GHG emissions. Therefore there should be a total moratorium on building any new fossil fuelled power plants. Renewable energy is ready and waiting to be implemented. It has been proven already and we have ideal, high solar insolation sites which could satisfy all our electrical generation needs, both peak demand and base load demand. Solar thermal power, with thermal storage is waiting to be built on a large scale and will not only reduce GHG emissions to new 300 but will create prosperity in the new era we have already entered.	Chapter 4 Alternatives	Objections noted.
263	Private individual	As a Stockton resident I would like to point out to you that clean coal is a joke. Daily I clean black patches from my house, roof and have to fertilise the garden as black dust as environmentally disgusting. The noise that we are subjected to with the building on the 2nd coal loader at Koorangong Island keeps us awake at night. The hunger and greed for coal needs to be diverted into clean resources. I have just returned from California where solar and wind as well as geothermals are big. Why are we driving our experts offshore? I have children and grandchildren. What will they say about the planners of 2009-10?		While these concerns are valid, these objections relate to othe projects (ie coal mining and the coal loader). The objections are noted however in relation to coal related industries generally
264	Private individual	• Alternatives to known greenhouse gas emitting power stations need to be establish • The short term gains to the economy will be just that, short term, there will be no economy when the environment we live in is not capable of sustaining us; the people • Henceforth all new energy projects should be based on a sustainable renewable energy model • This issue is not about the future changes to our approach to the way we live and conduct our fiscal lives needs to change now! All actions by government need to	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
265	Private individual	• Climate change will effect the entire globe and needs urgent action from all of us to even begin to avert the cri • Coal fired power stations are the most polluting generation option • New power stations must not be coal fired if climate change and greenhouse pollution is to be halted and reversed • Other energy options need to be explored and supported by governments on an urgent basis	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
266	Private individual	• In the face of climate change we must find alternatives to coal fired power stations immediate • The extra pollution that these power stations will contribute to the atmosphere is untenable • There must be an immediate ban on new fossil fuelled power stations in NSW • We must make the transition to renewable energy as a matter of urgency	Chapter 4 Alternatives Chapter 5 Air Quality Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
267	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
268	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
269	Private individual	• climate change is a global crisis that must have immediate and urgent actio • coal fired power stations are the biggest threat to the climate and to all life on earth; • greenhouse pollution must decrease immediately in NSW; • the planned coal or gas fired power stations would drastically increase greenhouse pollution by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an immediate and urgent transition to renewable energy. • Climate change is the single biggest threat to life on earth.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
270	Private individual	I submit that climate change is caused by the burning of fossil fuel and co2 emissions. Emissions of co2 must fall dramatically now if we are to avoid the most catastrophic impacts of climate change. Building new fossil fuel powered power stations will commit us to more emissions and worse impacts. When the world moves away from coal Australia will be left behind. We will have lost any possible competitive edge in the renewable energy industry, leaving us wi no jobs and the worst effects of climate change. There must be an urgent transition to renewable energy and no more fossil fuel powered power stations ever	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
271	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore life on earth; • greenhouse pollution must begin to fall immediately in NSW and Australia as a whole; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy. Let's be a progressive and forward thinking front on this issue	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
272	Private individua	Climate change is a global crisis that needs urgent attentior		Objections noted.
273	Private individual	I am opposed to any new coal fired power stations given the climate emergency the world is facing. Therefore I object to the proposals to begin mining at Bayswa and Mt Piper. Australia must take seriously its obligation to reduce greenhouse emissions by scaling back coal exports and ultimately phasing out coal in favour of renewable energy	Section 10.1 Policy Contexts	Objections noted.
274	Private individual	I write to inform you that I am opposd to the new fossil fuel power stations being established at Bayswater and Mt Pip I am concerned that these new planned stations will increase our greenhouse pollution by as much as 20% and this is totally unacceptable. Our society must urgently transition to renewables.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
275	Private individual	The time has come for genuine leadership on climate change. The NSW government has a choice to make in order to supply energy. And renewable energy is only long term, sustainable and responsible option, one that is inevitable, popular and democratic. Make the right choice!	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
276	Private individual	at our disposal that will create energy in a safer, cleaner, more efficient way! Fossil fuels are a limited source and are digging the world into a deeper grave the mo they are used. Soon there will be none left and you will HAVE to use a different method anyway. So why not start now?? Save time, money, effort and most importantly, the very home you and I live: The Earth. In the end you may be rich, but you won't have a world to share it with. You'll just have the guilt of being part o cause and that money will be completely worthless. Please please please for the sake of the future and those who will have to dwell in your destruction. Don't do it	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
277	Private individual	Climate change is an urgent global issue for all nations. Coal fired power stations are one of the largest threats to the climate and life on earth. New power static directly increase carbon dioxide emissions which need to be reduced. We need an immediate shift to renewable energy not new power stations. I would also like to add that this is an equity issue and that we really have no right to continue polluting when the result will be so drastic on so many peoples lives. Thank you for considering this important matter.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
278	Private individual	• More long term viable alternatives are available • Voters in NSW should be given a vote on whether these should be undertaken • Subsidisation of household solar power is a viable way of preventing the need for new coal power stations • Increases in usage charges for coal power would help decrease the need for new power stations	Chapter 4 Alternatives	Objections noted.
279	Private individual	Climate change is a global crisis that needs urgent action and greenhouse pollution must begin to fall immediately in NSW. The planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%. Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth. There must be an immediate ban on new fossil-fuelled power stations in New South Wales! Please support an urgent transition to renewable energy instead of building more coal-fuelled power station.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
280	Private individual	There must be an immediate ban on new fossil fuelled power stations in NSW		Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
281	Private individual	Climate change is a global crisis that needs urgent action. Coal fired power stations are the single greatest threat to the climate, and therefore life on earth. This is about the economy versus the environment. This is about the future of humanity, the future of our children and of all life on earth. Greenhouse pollution must begin to fall immediately in NSW. The planned new coal- or gas-fired power station would drastically increase NSW greenhouse pollution, by as much as 20%. There must be an immediate ban on new fossil-fuelled power stations in NSW. There must be an urgent transition to renewable energy. By transitioning to renewable energy we can create a better future for everyone	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
282	Private individual	Please accept this submission as my expression of my disapproval of the proposed new fossil fuel powered power stations at Bayswater and Mt Pip • Climate change is a potentially catastrophic crisis that must be addressed now • Coal fired power stations are the single greatest threat to the earths climate • Greenhouse gas pollution must begin to fall immediately The planned new coal or gas fired power stations would drastically increase NSW greenhouse pollution. This is a crazy proposition	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
283	Private individual	Climate change is a problem. It mussed be addressed. The question is how? Well, it seems to me we in Australia are being ripped off by the multinationals. All right, why not play their game? Sell 'em the coal but let's value add it. Insist that all exporters export say 5% of product (in 5 years time) in Australian flagged and crewed ships. We are an island nation. We need to have a viable merchant navy and shipbuilding industry. Also make the industry "coal chain" get more efficient levy the industry double the amount in penalties for ships parked off our shore (called "demurage"). This money could be used to fund research into solar energy		Noted
284	Private individual	• climate change is a global crisis that needs urgent action by the state government • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • NSW state govt must act to make greenhouse gas pollution fall immediately in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution and therefore cannot be supported by the NSW state gov • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
285	Private individual	• climate change is a global crisis that needs urgent action • greenhouse pollution must begin to fall immediately in NSW; • The planned new coal- or gas-fired power stations would drastically increase NSW and global greenhouse pollution by as much as 20%; I have grandchildren to whom I wish to bequeath a livable world. • there must be a ban on new fossil-fuelled power and focus directed at alternative energy sources.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
286	Private individual	I wish to submit the following words of opposition to the proposals. To establish more fossil fuel powered power stations in the state of NSW is irresponsible. T states level of co2 emissions makes us serious contributors to global warming. We have economic and natural resources to produce fuel safely ie. To reduce our co2 emissions to a safe level. The planned power stations would increase the states greenhouse pollution by as much as 20%. We simply must make a transition to renewable sources of fuel.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
287	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
288	Private individual	• Climate change is the greatest threat to human civilisatio • Coal fired power stations make a massive contribution to Australia's greenhouse gas emissions and fuel climate change • Greenhouse pollution must decline now if we are to stop dangerous, runaway climate change. • The planned coal or gas fired power stations will drastically increase NSW GHG by as much as 20% This is disgusting behaviour and must stop now. We need an urgent transition to renewable energy!!	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
289	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
290	Private individual	I submit that climate change is a global crisis that needs urgent attention. NSW needs to develop sustainable methods of producing energy. Not only are coal fi power stations the source of most of Australia's greenhouse pollution, but they rob sustainable industry of opportunity. There must be an immediate ban on new fossil fuelled power stations in NSW, and an urgent transition to renewable energy. The planned coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
291	Private individua	I submit that climate change is a global crisis that needs urgent attention. Seems like a bloody stupid ic		Objections noted.
292	Private individual	I am submitting that I am extremely concerned about carbon pollution in the atmosphere causing unacceptable climate change / global worr • That the planned new coal or gas-fired power stations will dramatically increase NSW greenhouse pollution by as much as 20% • That coal fired power stations are the single greatest cause of carbon emissions that threaten life on earth • That there must be an immediate ban on new fossil fuelled power stations in NSW • That there must be an urgent transition to renewable energy	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
293	Private individual	• Climate change is a global crisis that needs urgent actio • Coal fired power stations are the single greatest threat to the climate and therefore to life on earth. • There must be an immediate ban on new fossil fuelled power stations in NSW	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
294	Private individual	I find it incredible that in a carbon constrained future the NSW government is even considering new or expanded coal-fired power stations. I urge you to recomme these power stations be rejected and instead the NSW government invest in renewable energy and energy efficiency	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
295	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall; • immediate ban on new fossil-fuelled power stations in NSW; • urgent transition to renewable energy. We as a whole community must take action to prevent this global crisis. To do this will be to live without regrets.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
296	Private individual	• Climate change is a global crisis that needs urgent action towards climate justic • Coal fired power stations are the single greatest threat to the climate and life • There must be an immediate ban on new fossil fuelled power stations in NSW	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
297	Private individual	I submit that all fossil fuel powered stations are inherently unsustainable. This is such a simple fact that children the age of my 7 old daughter (and younger) can easily understand it. It is illogical and morally repugnant to force this folly onto coming generations. I further submit that the ongoing sovereignty of the peoples on whose land these stations are proposed to be situated is an undeniable fact under international and natural law and must be addressed as a matter of urgency. It is outright theft and vandalism to continue a path which would ignore these facts I submit that the proposed plans for stations be immediately scrapped and the process halted. I further submit that monies budgeted be redirected to sustainable energy projects on close consultation with all traditional sovereigns.	Chapter 4 Alternatives	In relation to the Traditional Owners, as shown in the EA and in this Submissions Report, the project was undertaken in accordance with DECCW guidelines and in full consultation with the Aboriginal community
298	Private individual	• climate change is an impending global catastroph • coal fired power stations are the single biggest contribution to global climate change, and a threat to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned coal and/or gas fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on all new fossil fuel power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
299	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
300	Private individual	I submit that that expansion of the coal fired power generating industry should be the subject of a moratorium until the capture and safe storage of the pollutant C can be demonstrated to a high level of confidence. The expectation that the CCS technology may be workable in several decades is too late for the IPCC requirement that CO2 pollution levels should be falling before that date. Please keep me informed as to the determination of this issue as I am greatly concerned that the NSW Government is not addressing the matter with adequate urgency	Chapter 6 GHG	Objections noted.

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301	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
302	Private individual	This letter is a submission in opposition to the construction of any new coal fired power stations in NSW, in particular those planned for Bayswater and Mt Piper. The most urgent problem faced by humanity at present is the level of CO2 equivalent gases nthe atmosphere. I am sure I do not need to quote the science at you. The commissioning of new coal fired plant instead of readily available sustainable non-polluting alternatives is and will go down in history as a crime against humanity.		Objections noted.
303	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
304	Private individual	• climate change is a global crisis that needs urgent action; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • Further studies on how to use alternative energy and funded by government	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
305	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
306	Private individual	As 'clean coal' i,e, coal sequestration is a doubtful and unproven science Public funds should not be wasted. Let the coal industry try to prove unknown technology. Meantime our taxes should be spent on known clean green technology - solar, wind, wave, etc. Our future is grim if coal-fired power stations continue and these should be immediately banned. Please implement measures towards renewable energy as an urgent matter	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
307	Private individual	Coal fired power stations are the signle greatest contributor to global warming. Greenhouse pollution must cease immediately. There are other safer power optio that are sustainable and environmentally friendly. Why not?!	Chapter 4 Alternatives	Objections noted.
308	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
309	Private individual	I write to you as a concerned citizen who has been personally making changes to my personal lifestyle in order to reduce my carbon impact. I would think that people in your position can make the simple and ethical decision to stop building new carbon intensive power stations. The alternatives are there and are viable. All you need to do is get a backbone and take a stance. If your incapable of this then just resign, maybe someone better will take your job	Chapter 4 Alternatives	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
310	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
311	Private individual	The new power stations at Bayswater and Mt Piper using fossil fuel power, is a threat to increasing already damaging climate change effects. This is a global cri that necessitates urgent actions, that potentially may cause even greater harm to our environment, societies and people. There must be an immediate response to such a crisis and stopping the up to 20% increase to greenhouse pollution must be enacted. There must be an immediate ban on NSW fossil-fuelled power station NSW and a transition to renewable energy	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
312	Private individual	The new fossil fuel power station at Bayswater is inappropriate in an environment threatened by climate change and as su 1. amounts to ignoring an imminent global crisis of climate change. 2. coal fired power stations are one of the greatest contributors to warming via CO2. 3. to prevent the climate warming exceeding a 2 degrees C rise is essential to prevent a catastrophic tipping point 4. the potentially represents an appalling squandering of limited state resources on probable 'white elephants' 5. the only sensible strategy is to move as quickly as possible to renewable energy. Please reconsider this decision for the benefit of our future citizens.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
313	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy. Even if I'm not living in Australia, I will feel directly the consequence of your political choices. That's why I feel concern about what happen in Australia.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
314	Private individual	Climate change is real, it is a global crisis and URGENT ACTION is required to cut greenhouse emissions (before it is too late). Given the government's suppos commitment to addressing climate change and 'sustainable' development, I find it hypocritical that there are development applications for two new fossil fuel powered power stations in NSW, these stations could potentially increase NSW greenhouse pollution by 20% There must be an immediate ban on the development of new fossil fuelled power stations in NSW and an urgent transition to clean renewable forms of electricity production	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
315	Private individual	The proposal of two new coal powered power station sseems ridiculous. The amount of money being poured into the mining industry in my opinion would be p muich better use by creating renewabele energy power stations. I am a surveyor for a large company based in Newcastle, we have some large clients, such as coal and allied, PWCS, the RTA, etc. It seems that expanding the coal export in Newcastle is a huge project that, in the long run will leave us with nothing. Is it not apparent that coal will run out eventually, leaving us with millions of dollars worth of infrastructure, and an unstable foundation for our city. The technology is there for us to utilise renewable energy, with more and more focus being put on the environment, and cliamte change being an everyday term, I cannot understant why we don' t put our great country to use by tapping into renewable energy. I'll admit I don't know a lot, but I know a little, and Australia has the capability to obtain power from wind tunnels, solar farms, geothermal rocks, tidal power, etc. Thos	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
316	Private individual	This is a submission AGAINST the expansion of the coal power industry. Specifically the proposal for new coal power stations at Bayswater and Mt Piper. • Urgent action is needed to stop runaway catastrophic climate change • Unless we begin to REDUCE emissions in NSW we are going to globally trigger a number of tipping points where action will be too late • Offsets are a con • Clean coal is a RUBBISH argument. There is no such thing and even if it did work and was 99% effective (which it never would be) it would still result in an increase in CO2 pollution. • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
317	Private individual	This letter is to inform you of my indignation at the idea of developing new coal fired power stations - specifically the two under consideration at Bayswater and Piper. We need to be shutting down coal stations not building new ones! Demand and supply cannot be followed like a religion - there needs to be a change AWAY from reliance on fossil fuels! Greenhouse pollution must begin to fall immediately. Let's ban the building of new stations NOW.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
318	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
319	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are one of the main contributors to climate change - and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%; • calling for an immediate ban on new fossil-fuelled power stations in NSW;	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
320	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
321	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate and therefore life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the new planned coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
322	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
323	Private individual	This is a submission against new fossil fuel powered power stations at Bayswater and Mt Piper. I, like many others in my community are deeply concerned about threat that climate change poses to all of us, as well as the natural environment. We should do all we can to minimize our impact on the environment and to reduce pollution output. Please reconsider the creation of the new power stations for all our sakes.		Objections noted.
324	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
325	Private individual	I submit that climate change is a global crisis that needs urgent action. It affects everyone on this planet now and into the future. Coal fired power stations are t single greatest threat to the climate and therefore the earth. Greenhouse gas emissions need to be lowered immediately througout Australia and the world, particul in Australia however as we are the greatest polluter in this area. There must be an immediate ban on new fossil fuelled power stations in NSW and there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
326	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
327	Private individua	Climate change is a global crisis that needs urgent actio		Objections noted.
328	Private individual	• What is happening to our plant is serious - a GLOBAL CRISIS - we need urgent action NOW • 'Coal is the single greatest threat to civiilisation and all life on our planet' I quote James Hansen. • We have little time and resources and are running out - we need NEW ways - Renewable ways to make electricity. • Coal is the way of the past. New coal or gas fired power stations increase NSW Greenhouse pollution • You need to ban new fossil fuelled power stations • You need to be looking towards renewable energy • NSW Government needs to show strong leadership in coping with climate change. Do you understand the ramifications if action is not take NOW.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
329	Private individual	Urgent action against climate change has to be taken therefore there needs to be a ban on new fossil fuel power stations in NSW and everywhere. Greenhou pollution must begin to fall immediately and the planned new power plants would instead drastically increase NSW greenhouse pollution. Invest in renewable energy instead of closing your eyes to climate change.	Chapter 4 Alternatives Chapter 6 GHG	Objections noted.
330	Private individual	Approving these new stations poses a major threat to efforts to curb CO2 emissions and reduce the pressure to reduce base power load generation, ener conservation and renewable energy. I urge you to review the tarrif(?) feed in provisions to encourage renewable energy such as the ACT model. I oppose these ne stations and call on the government to reject these proposals	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
331	Duplicate	Duplicate		
332	Private individual	Climate change is a global crisis that needs urgent action. We need a progressive transition towards using green energy and I feel that Bayswater should not allowed to go ahead.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
333	Private individual	• climate change is a global crisis that needs urgent action • the planned fossil fuel power stations would drastically increase NSW greenhouse pollution, • there must be an urgent transition to renewable energy. • there needs to be a halt to the building of new fossil-fuel powered energy / power stations	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
334	Private individual	• climate change is a global crisis that needs urgent attention • coal fired power stations are the single greatest threat to the climate, and therefore life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
335	Private individual	• climate change is a growing global crisis that needs long overdue actior • coal fired power stations contribute enormously to climate change, and therefore threaten life on earth as we know it; • greenhouse pollution must begin to fall immediately in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations and an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
336	Private individual	We need to take climate change seriously because it is something that is already taking an effect on the environment. This is why we can not continue with coal fi power stations since they are the single greatest threat to the climate		Objections noted.
337	Private individual	• climate change is a global crisis that needs urgent attention and actior • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
338	Private individual	Electricity generation from burning gas and coal is archaic and absurd in the face of climate change. The expansion of dirty power stations is criminal when you consider the consequences of the resulting emissions, particularly on the people of the developing world who are bearing the brunt of climate change. It is also a crime against future generations. We can and must move in a new direction away from fossil fuel powered energy. This needs to happen immediately if we are to avoid the worst of climate change. For these reasons I support a ban on any new coal or gas fired power stations and call on the government to massively expand the renewable energy sector.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
339	Private individual	I would like to express my concern about the construction / expansion of any more fossil fuel powered power stations in the state of NSW, or the establishment of a new coal mines until research is completed into the feasibility / impacts on our environment of mans intervention into out natural landscape. I have resided in the Hunter Valley for the past 37 years and was previously based in the Liverpool Plains and Tamworth districts. I am extremely concerned about what I read about and witness in terms of mans impact on these fragile environments, and agree with those groups who are trying to question the feasability of continuing to support the status quo rather than review seriously what is going to be in the best interest of our future as Australians and world citizens.		Objections noted.
340	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate; • greenhouse pollution must begin to fall immediately in NSW; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
341	Private individual	Climate change is a problem and to suggets that we can employ the myth of clean coal in the foreseeable future. As such it is not pracical or sensible or inde rational to expand our dependence on coal with the looming problem of climate change. I submit that we shoudl plan our cities better and reduce our dependance on energy. This can be achieved.	Chapter 4 Alternatives	Objections noted.
342	Private individual	Climate change is a global crisis that needs urgent action. Coal fired power stations are the greatest threat to the climate and to life on earth. Greenhouse pollution must begin to fall immediately in NSW. There must be an urgent transition to renewable energy. Australia is uniquely positioned to lead the world in developing renewable energy and exporting our expertise to the world. We must not be short-sighted and keep investing in 19th Century technology - Green Jobs now! No more fossil fuel powered power stations!	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
343	Private individual	Submission opposing new coal-fired energy facilities (Bayswater and Mt Piper) given the current state of scientific knowledge regardir • Carbon dioxide currently in the atmosphere • The proven effects of current levels of carbon dioxide • the ready availability of renewable energy technologies and base load storage • the catastrophic effects of further increases in carbon dioxide • Australian obligations under the Kyoto Protocol The NSW Government would be unwise to permit any new coal-fired power stations.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
344	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned new coal or gas fired power station would drastically increase NSW • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy. Our earth is a precious, generous and fragile entity, we should all respect and care for the beautiful creative plant that has given so many things, including humans life. I hope with all my heart that this beautiful planet is in a good enough state to support future generations. As the Director General for the Department of Planning you should be planning a brighter, more beautiful greener future than one ravished of all beauty and fertility. If you are worth the enormous pay check and lavish life you	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
345	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the earth because they have immediate impact upon the environment. Our greenhouse emissions must begin to fall immediately in NSW. Sure you can create awareness like things such as earth hour but in the end that's all it is doing creating awareness among the general public trying to create a social change for climate change. But it is you that could choose to stop this global downfall and create direct action towards a cleaner future for our earth. This planned new coal or gas fire power stations would drastically increase NSW greenhouse gas pollution by as much as 20%! WOAH! So there must be an immediate BAN on new fossil fuel power stations in NSW. There must be an urgent transition to renewable energy	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
346	Private individual	There must be an immediate ban on new fossil fuelled power stations in NSW There must be an urgent transition to renewable energy	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
347	Private individual	I submit that climate change is a global crisis that needs urgent action and NSW must reduce greenhouse pollution immediately. Australians are per capita among worst emitters of greenhouse gases and this needs to change. Coal fired power stations are the single greatest threat to climate and therefore to life on earth. The planned new coal or gas fired power stations would drastically increase NSW greenhouse pollutions bu as much as 20%. There must be an immediate ban on new fossil fuelled power stations in NSW. There must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
348	Private individual	• climate change is a global crisis requiring urgent action • the planned new power stations would increase NSW greenhouse pollution by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy. Please do not open new fossil fuel powered power stations in NSW.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
349	Private individual	• climate change is a crisis - it needs urgent action; • coal fired power stations are the single greatest threat to our climate, and therefore to all life on earth; • greenhouse pollution must begin to fall IMMEDIATELY in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an IMMEDIATE BAN on new fossil-fuelled power stations in NSW; • please, please consider an urgent transition to renewable energy. Thank you for giving this your consideration	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
350	Private individual	• climate change is the most urgent issue and addressing it requires urgent and substantial actio • coal, and coal fired power stations emit huge amounts of greenhouse gases and are the biggest threat to future life on this planet; • These two power station expansions would increase NSW greenhouse gas emissions by as much as 20%; • we must BAN new fossil-fuelled power in NSW and Australia immediately; • we need an urgent just transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
351	Private individual	Climate change needs urgent action Greenhouse pollution must fall immediately; There must be urgent transition to renewable energy	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
352	Private individual	Immediate action and conserted Planning is needed to address the urgent crisis of climate change Continuing the same design and planning for development is counter to this need; Any resources that are put towards coal and fossil fuels are resources away from sustainable, clean air & futures; I urge you to place an immediate ban on new fossil fuelled power plants in NSW and stand up against the status quo for a hopeful future; We all need to make an urgent transistion an you hold a powerful position to make change. Please step up and make that change.	Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
353	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • the planned new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
354	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
355	Private individual	I submit that climate change is a global crisis that needs urgent action. Coal fired power stations are the single greatest threat to the climate and therefore life earth.		Objections noted.
356	Private individual	I submit that climate change is a global crisis that needs urgent action; Coal fired power stations are the single greatest threat to the climate and therefore life earth		Objections noted.
357	Private individual	Greenhouse pollution must begin to fall immediatelty in NSW The planned new coal or gas fired power stations would drastically increase NSW greenhouse pollution by as mush as 20%! There must be an urgent transition to renewable energy!	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
358	Duplicate	Duplicate		
359	Duplicate	Duplicate		
360	Duplicate	Duplicate		
361	Duplicate	Duplicate		
362	Duplicate	Duplicate		
363	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.
364	Private individual	I wish to oppose the above applications for power stations which are coal fired and will only increase greenhouse pollution in NSW Coal fired power stations are 20th century technology which is outdated and out of place in the 21st century. There should be an immediate change in government emphasis towards clean renewable energy - solar, wind, hot rock, wave, etc. Take some leadership and stop any thought of any new coal fired power stations.	Chapter 4 Alternatives Section 10.1 Policy Contexts	Objections noted.
365	Private individual	• climate change is a global crisis that needs urgent action • coal fired power stations are the single greatest threat to the climate, and therefore to life on earth; • greenhouse pollution must begin to fall immediately in NSW; • new coal- or gas-fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%; • there must be an immediate ban on new fossil-fuelled power stations in NSW; • there must be an urgent transition to renewable energy. Finally, there is no prospect of any jobs or any economy on a dead planet.	Chapter 4 Alternatives Chapter 6 GHG Section 10.1 Policy Contexts	Objections noted.

Rec'd Order No.	Group	Issues	Reference of the Submissions Report	Comments
366	Duplicate	Duplicate		
367	Duplicate	Duplicate		
368	Duplicate	Duplicate		
369	Duplicate	Duplicate		
370	Duplicate	Duplicate		
371	Duplicate	Duplicate		
372	Duplicate	Duplicate		
372	Private individua	***Refer to Letter***		Objections noted.
373	Duplicate	Duplicate		
373	**NSW Office of Water**	***Refer to Letter***	Refer to Section 11.5 for separate response	
374	**Environmental Defenders Office**	***Refer to Letter***	Refer to Section 13.6 for separate response	Objections noted.
375	**Nature Conservation Council of NSW**	***Refer to Letter***	Refer to Section 13.13 for separate response	Objections noted.
376	**Singleton Shire Council**	***Refer to Letter***	Refer to Section 11.3 for separate response	
377	**Industry and Investment NSW**	***Refer to Letter***	Refer to Section 11.4 for separate response	

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Appendix B

Air Quality Response to DECCW

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katestone environmental
Expert | Advice | Air

13 November 2009

John Marshall
Executive Engineer
Macquarie Generation
34 Griffiths Road
LAMBTON NSW 2299

Re: DECCW SUBMISSIONS ON AIR QUALITY ISSUES RELATED TO BAYSWATER B POWER STATION (MP 09_0118) EXHIBITION OF ENVIRONMENTAL ASSESSMENT – CONCEPT APPROVAL APPLICATION

Dear Mr Marshall,

Katestone Environmental has reviewed the Department of Environment, Climate Change and Water's (DECCW) submission in relation to air quality issues associated with the Bayswater B Power Station Concept Approval Application. Each issue has been reproduced below and a response has been prepared.

Issue A1: 2.1.1 Meteorological Data

(a) The proponent should provide a concise explanation detailing the final selection process for choosing the simulation periods.

The selection of multiple periods to model ensured that all conditions experienced at the proposed Bayswater B site were considered in the assessment. This includes selection of average periods, odd periods and periods where abnormal events occur. The process by which the final three periods were selected for the assessment occurred in the following stages:

- Stage 1: Probability distribution frequency (PDF) analysis of the wind speed and wind direction for all periods within the data set provided (15 years).
- Stage 2: Regression analysis to compare the wind speed and wind direction observations for each period compared against the data set average.
- Stage 3: Comparison of the PDF and regression analysis results from each site in order to select the periods that show the best representation of average (or normal), odd (or non-normal) and peak conditions.
- Stage 4: Investigation into pollution concentrations for each of the selected periods compared against the analysis of the whole data set, ensuring that peak pollution events occur within the selected periods.
- Stage 5: Final selection resulted in five representative periods for potential use in the dispersion modelling assessment.
- Stage 6: Discussion with local personnel (Macquarie generation staff) to ensure final periods selected did not include any unusual events such as excessive drought or

bushfires and that the Power Stations were operating normally (i.e Power Stations were not shut down for maintenance).

The periods identified in Stage 5 were:

- March 1999 – February 2000 (normal)
- March 2000 – February 2001 (normal)
- March 2001 – February 2002 (normal)
- March 2006 – February 2007 (non-normal)
- March 2007 – February 2008 (non-normal)

Of these periods all represented a wide range of meteorological conditions. The non-normal years are simply years where the distribution of wind directions and speeds are different to normal years. The R^2 regressions of individual years to the mean tends to be 0.97 or higher indicating little difference between the 'normal' years, with the 'non-normal' years being between 0.85 – 0.90. This shows there is not a large difference in wind conditions over the 15 years. However, some attempt has been made to discern some changes in the overall meteorological conditions during this time.

The final selection needed to incorporate at least one non-normal period and two normal. From the five possible periods to model March 2006 – February 2007 was ruled out due to significant drought conditions prevalent for that period as well as low data recovery rates for some of the ambient monitoring stations. Therefore March 2007 – February 2008 was selected to represent a non-normal period. From the three normal periods, March 2000-February 2001 was selected as this was the period coinciding with the period modelled in the model validation study. The final period, March 1999 – February 2000 was chosen as the highest number of exceedences of the 1-hour average SO_2 criteria were recorded at Lake Liddell for this period.

(b) The proponent should provide additional detail on the meteorological configuration of TAPM, including any observational data assimilation.

The TAPM meteorological modelling used for the impact assessment of Bayswater B Power Station did not include local observational data assimilation. The reasons for not including the data are as follows:

- TAPM performed well without local data assimilation particularly for the upper level wind stations
- The quality of data available varies between years with significant periods of missing observations

Given the good performance of TAPM at simulating the local meteorological conditions and the varied quality and availability of data for assimilation the justification to not included local data assimilation in the model is valid.

Issue A2: 2.1.2 Emissions Data Assessed

(c) Future assessment of the proposal should include fugitive particle emissions from the proposal.

Potential impacts are not expected to be of critical concern for the following reasons:

- Substantially larger coal storage and handling activities are conducted in closer proximity to residential land-uses with minimal impact

- Key sources of dust emissions from this type of activity are well known and, at the Bayswater B Power Station would include:
    - Wind erosion of stockpiles
    - Stacking and reclaiming of coal
    - Conveyors and conveyor transfers
    - Dump stations and loading and unloading facilities
- Dust emissions can be controlled by the application of engineering solutions and through good management practices, such as:
    - Application of dust suppressants to stockpiles
    - Enclosure of conveyors, conveyor transfers and dump stations
    - Use of wind breaks and vegetative buffers to reduce erosion potential of winds
    - Spillage clean-up

Given the above, compliance with DECCW's impact assessment criteria for particulate matter is likely to be achievable at nearest residences. To ensure that effective controls and management measures are implemented that will minimise dust emissions as far as is practicable at nearest residences, a quantitative assessment would be conducted.

(d) *Future assessment for the proposal should describe likely impacts from all fuel types proposed for combustion at the site.*

The two boilers for the coal fired option will be ignited by a fuel oil firing system. The air quality assessment did not provide a discussion of the properties of the fuel oil to be used at the site nor did it provide an estimate of the quantity of fuel oil that will be used by the proposal on an annual basis.

The use of fuel oil is not expected to affect Bayswater B Power Station's ability to comply with the emission limits that would be applied to the approval. Nor will the combustion of fuel oil materially affect the total load of air pollutants emitted from the power station per year. Notwithstanding this, a future assessment would include a quantification of fuel oil usage, a quantification of the emission rate of air pollutants associated with fuel oil firing and an assessment of the potential impacts associated with the use of fuel oil in the firing system.

(e) *Some regulated substances were assessed based on an emission concentration equivalent to the Protection of the Environment Operations (Clean Air) Regulation, 2002 (POEO Regulation) limit for Group 6 plant. Others, specifically cadmium, mercury and sulphur trioxide, have been modelled at concentrations significantly less than the POEO Regulation limit. The proponent should provide a modelling assessment in accordance with DECCW's Approved Methods (refer section 2.1.3 below).*

<u>Background to response</u>
Section 10.2 of the Approved Methods states:

1. *Emission limits reflect reasonably available technology and good environmental practice: The POEO Regulation sets the maximum emissions permissible for an industrial source located anywhere in NSW. The Regulation limits are based on levels that are achievable through the application of reasonably available technology and good environmental practices.*

2. *Emission limits reflect proper and efficient operation: Consistent with the requirement of the POEO Act (section 124), it is EPA policy to prescribe emission limits that are consistent with the proper and efficient operation of plant and*

equipment. Depending on the plant and equipment, these levels can be lower than those prescribed by the POEO Regulation.

3. *Emission limits protect the health and amenity of the surrounding community:*

   This document sets out:

   a. *health- and amenity-based impact assessment criteria for the protection of ambient air quality*
   b. *the process for assessing the impacts of air pollutant emissions on ambient air quality and the surrounding community.*

Sulfur trioxide

The POEO Regulation does not include emission concentration limits for sulfur trioxide from electricity generation. Consequently, the assessment was conducted using an emission rate of sulfur trioxide calculated based on anticipated Bayswater B coal properties, coal usage and energy usage and the emission factor equation from Liddell Power Station LBL and NPI handbooks.

There is a standard of concentration limit in the POEO Regulation for general activities and plant of 100 mg/m³. Had this limit been used in the assessment, the emission rate of sulfur trioxide would have been higher by a factor of 8 (181.3/22.7).

The maximum concentration predicted in the air quality study at a receptor was 2.2 µg/m³ (at Lake Liddell). The air quality criterion is 18 µg/m³. If an emission rate were used that corresponded to the concentration limit for general activities, the maximum concentration predicted at Lake Liddell would have been 17.6 µg/m³.

Cadmium and mercury

The POEO Regulation includes emission concentration limits for cadmium and mercury emissions from electricity generation. However, the assessment was conducted using emission rates of cadmium and mercury calculated based on Bayswater B coal properties, coal usage and energy usage and the emission factor equation from Liddell Power Station LBL and NPI handbooks.

The standard of concentration limit in the POEO Regulation for electricity generation is 0.2 mg/m³ for both mercury and cadmium. Had this limit been used in the assessment, the emission rate of cadmium would have been higher by a factor of 450 and the emission rate of mercury would have been higher by a factor of 180.

The table below shows the predicted concentration of cadmium and mercury (organic) from the Bayswater B air quality study. The table also shows the predicted concentration if it were scaled up by the factors detailed above for cadmium and mercury. The results in the table show that if cadmium were emitted at the regulatory limit of 0.2 mg/m³, the air quality criterion would be exceeded by a factor of two. Hence, if cadmium were emitted at a level of less than 0.1 mg/m³, compliance with the air quality criterion would be achieved.

The table also shows that if emissions of mercury were at the limit of 0.2 mg/m³, compliance with the air quality criterion for organic mercury would be achieved.

Pollutant	Averaging period	Criterion (µg/m³)	Parameter	Lake Liddell (µg/m³)
Cadmium and cadmium compounds	1-hour	0.018	BB AQ study rate	0.00008
			BB AQ study rate x 450	0.036
			% of criterion	200
Mercury organic	1-hour	0.18	BB AQ study rate	0.00023
			BB AQ study rate x 450	0.0414
			% of criterion	23

(f) Based on the requirements of the Approved Methods, existing power station Annual Return data and recommendations from the EU BREF's for Large Combustion Plant (2006), a solid particle emission concentration limit that is more stringent than the requirements of the POEO Regulation is appropriate for the proposal. On the balance of available information, an emission concentration limit of 30 mg/m³ for solid particles is recommended for the proposal.

The maximum incremental change in the 24-hour ground-level concentration of PM_{10} at a receptor was predicted to be 3.54 µg/m³. The maximum incremental change in the annual average ground-level concentration of PM_{10} was predicted to be 0.09 µg/m³.

The assessment of PM_{10} has assumed conservatively that all emissions of solid particles are in the form of PM_{10}. Data from Liddell Power Station indicates that ratio of PM_{10} to solid particles averages about 50%. If this ratio were applied to the results presented above, the maximum increment in 24-hour average concentration of PM_{10} would be 1.8 µg/m³ and the annual average would be 0.05 µg/m³.

(g) DECCW recommends that the proponent be required to conduct further assessment of emission concentration limits for the proposal, including an emission limit for SO_2. The emission concentration limits should be justified in terms of the requirements from Sections 10.2 of and 7.2.1 of the Approved Methods.

This issue is more appropriately addressed at the project approval stage.

Issue A3 2.2.1 NO_2 Prediction Methods *are* Inconsistent *with the Approved Methods*

(h) The assessment does not provide an example calculation for the Janssen method undertaken.

Katestone Environmental applied the Janssen method in accordance with the Approved Methods. The DECCW's question indicates that the reviewer may have misunderstood the results that were presented. A worked example of the calculation used to account for the transformation of NOx to NO_2 is provided below.

Janssen's method requires that calculation of two parameters that determine the rate of NO to NO_2 conversion. The first of these, the Decay Rate, depends on the ambient ozone concentration [O_3] and the second (k2) depends upon the solar radiation. These are defined as follows:

DecayRate = 29/60000 * [O_3] / WindSpeed
k2 = 0.55/60 * SolarRadiation / Max_SolarRadiation

The numerical coefficients in the equations above are from Janssen's publication that is referenced in the Approved Methods.

The other coefficient that is required is an amplitude term:

Amplitude = 1 / (k2 / (29/60000) / [O_3] + 1);

The NO_2 to NOx ratio (Ratio) in terms of distance between source and receptor is given by:

Ratio = Amplitude * (1 - exp(-DecayRate * Distance))

Note that the Decay Rate is inversely proportional to wind speed and proportional to [O_3]. The product of the Decay Rate with distance gives a parameter that is proportional to the time taken for emissions to travel from source to receptor.

Application of the Janssen method by Katestone Environmental for the Bayswater B Power Station is illustrated by the following worked example.

The receptor is at Lake Liddell and the simulation date and time are 20 May 2000 at 1600 hours. The following assumptions have also been made:

At the source, 90% of NOx is NO, represented as NO_2 equivalent
The ambient [O_3] is 120 ppb;
The maximum solar radiation is 1150 W/m^2

Also, for this example the following were obtained using the TAPM model:

The solar radiation at 1600 hours is 97.7 W/m^2
The wind vector is 7.5 m/s at 277 degrees (0.0075 km/sec);
The predicted ground-level concentration of NOx due to the Bayswater B Power Station (coal) is 72.98 µg/m^3 (NO_2 equivalent)
The distance between source and receptor is 10.7 km

Inserting the appropriate numerical values into the above formulae gives:

k2 = 778.8e-6
DecayRate = 7.733
Amplitude = 0.987

Note that at a distance of 10 km from the power station, the contribution of the exponential function to the Ratio is negligible, resulting in almost total (98.7%) conversion of NO to NO_2.

Calculation of total NO_2 concentration is as follows:

- Predicted increment in ground-level concentration of NOx due to power station is 72.98 µg/m^3 (NO_2 equivalent).
- Dividing by the molecular weight of NO_2 (ie. 46) gives the number of moles of oxides of nitrogen. Therefore, amount of oxides of nitrogen is 1.587 micromoles/m^3 or µM/m^3.
- Of this, 10% is NO_2 in the stack (0.1587 µM/m^3), leaving 1.428 µM/m^3 of NO.
- Since 98.7% of NO is converted to NO_2, this yields 1.409 µM/m^3 of NO_2.

- Combining this with the initial 10% emitted from the stack 1.57 µM/m³ of NO_2 or 72.11 µg/m³.

(i) ...the assessment should provide more detailed results that demonstrate cumulative impacts under both high background and high incremental NO_2 hours.

To illustrate that the results that are contained in the air quality report are correct, additional results from the Lake Liddell monitoring station are presented below. The Table 2 reproduces the results of modelling using the Janssen method from the air quality study for the Lake Liddell receptor for the background ozone case of 120 ppb.

Table 2 Air quality assessment of Bayswater B (coal) results for nitrogen dioxide (1-hour average µg/m³) at Lake Liddell calculated using the Janssen method and ozone concentration of 120 ppb

Receptor	Assessment criterion	Ozone Concentration 120 ppb		
		1999	2000	2007
R8	Background	81	81	116
	Bayswater B in isolation	58	72	59
	Bayswater B plus background	86	81	117

Table 3 provides the top three predictions for maximum increment of Bayswater B in isolation and the total concentration calculated with the addition of contemporaneous background. Table 4 provides the top three background concentrations with the corresponding increment due to Bayswater B in isolation and the total concentration calculated with the addition of contemporaneous background plus increment. In both Table 3 and Table 4, the relevant corresponding result from Table 2 has been highlighted.

Table 2 Top three predictions for maximum increment of Bayswater B (coal) in isolation and the total concentration (1-hour average µg/m³) calculated with the addition of contemporaneous background

Rank	1999			2000			2007		
	Back-ground	BB isolation	Total NO_2	Back-ground	BB isolation	Total NO_2	Back-ground	BB isolation	Total NO_2
BB1	27.2	57.8	85.0	3.5	72.1	75.6	41.1	58.8	99.9
BB2	41.5	44.2	85.7	0.0	71.3	71.3	6.0	37.4	43.4
BB3	38.0	44.2	82.1	6.3	62.2	68.5	18.7	34.4	53.1

Table 3 Top three background concentrations with the corresponding increment due to Bayswater B (coal) in isolation and the total concentration (1-hour average µg/m³) calculated with the addition of contemporaneous background plus increment.

Rank	1999			2000			2007		
	Back-ground	BB isolation	Total NO_2	Back-ground	BB isolation	Total NO_2	Back-ground	BB isolation	Total NO_2
Back1	80.9	1.6	82.4	80.7	0.2	80.9	116.5	0.2	116.6
Back2	77.9	0.0	77.9	79.8	0.0	79.8	107.3	0.2	107.5
Back3	77.5	0.0	77.5	75.0	0.0	75.0	106.7	0.2	106.8

The results in Table 3 and Table 4 show that both high background and high increment have been considered to generate the results of the assessment for nitrogen dioxide.

Issue A4 2.2.2 SO_2 Exceedances are Predicted

(j) The assessment of 1-hour SO_2 is unlikely to be conservative.

The assessment has considered the maximum sulphur content expected from the Bayswater B Power Station for a full three years of meteorological conditions. The predictions have then been added to the monitoring data to determine the maximum sulphur dioxide concentration expected at each sensitive receptor. The background monitoring data included one year with the highest number of exceedences recorded at Lake Liddell. It is not clear how the reviewer has come to the conclusion that the assessment of 1-hour average SO_2 is unlikely to be conservative.

(k) The proponent should present assessment results for all receptor locations.

Tables 50 to 53 present an assessment of potential impact (cumulative assessment) at all sensitive receptor locations. Both the average and maximum sulphur emissions from Bayswater B Power Station have been assessed and added to the background from the closest ambient monitoring station.

(l) The proponent should present the number of additional exceedances predicted at aII sensitive receivers for all scenarios assessed.

The attached table presents the number of additional exceedences at all sensitive receptors for the maximum and average sulfur emission scenarios. It should be noted that the same exceedences may be counted at more than one location for the same hour, particularly for receptors located within area.

(m) The Approved Methods would typically require the maximum 10-minute background for that hour be added to the model prediction to give a cumulative assessment result.

The results for the 10 minute average predictions have been redone to determine the number of additional exceedences at all receptor locations adding the maximum 10 minute measurement within each hour to the hourly predicted concentrations converted to a 10 minute peak using the standard power law relationship for tall stack sources (i.e all hourly concentrations multiplied by 1.98 to estimate the peak 10-minute concentration). These results are presented in the attached Table.

(n) Incremental 10-minute SO_2 exceedances are predicted. The assessment states that "model results show that the typical scenario will result in up to one additional exceedance of the 10-minute SO_2 impact assessment criterion of 712 µg/m^3 at up to two sensitive receptors locations over the three simulation periods due to the proposed power station in isolation. However, results in table 49 (Appendix D) show four receptors, namely R3, R4, R10 and R12 could experience additional exceedances of the 10-minute criteria based on the proposal's emissions alone.

See revised results in the attached Table.

(o) Table 54 (Appendix D) shows additional exceedances using the stochastic assessment method. From results presented in table 54, it appears that the stochastic assessment method has only been applied to 5 of the 12 receptor locations identified in the assessment.

In the time available to address these comments it was not possible to assess all sensitive receptors in the same manner as was completed at the monitoring station locations.

Issue A5 2.2.3 Acid deposition

(p) The EA does not address the potential impacts of the proposed power station on acid deposition. The proponent should investigate the potential for acid deposition as part of the assessment.

The air quality assessment shows that the maximum ground-level concentrations of acid gases comply with the DECCW's air quality criteria at nearest residences.

The DECCW's Approved Methods does not contain assessment criteria for acid deposition, nor are there assessment approaches defined.

Acid deposition is a regional and interregional issue. A detailed study can be conducted in the future.

Issue A6 2.2.4 Hydrogen Fluoride (HF) Exceedances are Predicted

Commentary from DECCW

A cumulative HF assessment was undertaken by modelling emissions from the proposed coal fired option; the existing Bayswater Power Station and the Liddell Power Station. The assessment considered both general land use and sensitive land use ground level concentration criteria. The assessment predicted exceedances of both general and sensitive land use criteria.

General land use criteria are exceeded at R7, R8 and R9 for the 24-hour averaging period. The number of exceedances at each receiver is not specified in the assessment.

The sensitive land use criteria are exceeded at Arrowfield Winery for the 24-hour averaging period. The number of exceedances is not specified in the assessment. The predicted 90-day averaged HF concentration was very close to DECCW's ground level concentration criteria, 0:24 uglm^3 compared with 0.25 µg/m^3. Allowing for model and assessment uncertainty, it is possible that the 90-day averaged exceedances could occur at Arrowfieid Winery.

Due to a typographical error, the last paragraph of page 95 of Appendix D (section 9.8) erroneously states that the maximum 30-day average HF ground level concentration at Arrowfield Winery is 0.24 µg/m^3. This actually refers to the 90-day averaged maximum HF ground level concentration.

(q) The proponent should demonstrate that no adverse air quality impacts are likely to result from HF emissions from the proposal.

The air quality assessment shows that ground-level concentrations of fluoride will be below the air quality criteria for 7-day, 30-day and 90-day averaging periods at sensitive locations. The air quality assessment included the proposed Bayswater B Power Station operating at an emission rate consistent with the POEO Clean Air Regulation limit of 50 mg/m³ and in conjunction with modelled emissions from Bayswater and Liddell Power Stations. These longer term criteria are most appropriate for the assessment of the potential impact of hydrogen fluoride from the power stations. Compliance with the criteria indicates that there is unlikely to be an adverse impact of fluoride emissions on sensitive land-uses.

Whilst the assessment has used an emission rate from Bayswater B Power Station that is consistent with the POEO Clean Air Regulation limit of 50 mg/m³, measurements from Bayswater and Liddell Power Station over the last two years indicate that the emission concentration rarely exceeds 10 mg/m³. As a consequence, actual emission rates will be much lower than those modelled.

If the emission rate of fluoride was determined based on the measurement of 10 mg/m³, the maximum 24-hour average concentration at a receptor due to the Bayswater B Power Station in isolation would be 0.64 µg/m³. Compliance with the DECCW assessment criteria of 1.5 µg/m³ is likely to be even with the inclusion of background emissions from the existing power stations.

Issue A7 2.2.5 Carbon Monoxide (CO) Results are Inconsistent with the Requirements of the Approved Methods

(r) Section 10.2 of Appendix D advises that maximum 1-hour CO results are reported as 99.9th percentile predictions. The Approved Methods requires that CO assessment results be presented as maximum predicted (100th percentile) concentrations. Based on the low incremental predictions provided in the assessment, it is extremely unlikely that the peak impact from CO would be significant as a 100th percentile result.

The carbon monoxide results that are presented in Table 68 and 69 of Section 10.2 are actually maximum (100th percentile) concentrations. The third sentence of the first paragraph of Section 10.2 is incorrect in stating that the results for the 1-hour averaging period are 99.9th percentiles.

Issue A8 2.3 Model Performance Assessment

(s) Two key points to note from the validation are:

a) TAPM simulated meteorology was compared to meteorology measured at local monitoring stations. The assessment found good general agreement between observed and predicted meteorology. The assessment lacks detail regarding data input and configuration for the TAPM model. If high quality observation data (wind fields) were assimilated into TAPM, it is reasonable to assume that the model would perform well when predicting meteorology at those locations. The ability of the model to accurately predict meteorology at other locations on the model domain remains undemonstrated.

As detailed in response to Issue A2 2.1.1, no observations were used in the TAPM modelling therefore the comparison of the TAPM's performance against the local observations is valid and shows good general agreement between the observed and predicted meteorology. As local observations were not assimilated in the model to nudge the model predictions towards the observations at some locations, it is valid to suggest the model has performed well at other locations within the modelling domain.

(t) Section 9.6 of the Approved Methods requires that dispersion modelling files be supplied as an accompaniment to the air quality assessment report. The assessment was conducted using TAPM. DECCW recognises that the size of many of the files created by TAPM is prohibitively large for transfer. However, DECCW requests the following files from the TAPM simulation:

*a) *.def (TAPM GUI default file)*
*b) *.lis(TAPM listing file)*
*c) *.inp (TAPM input file)*

These files are contained in the attached zip file.

Yours sincerely,

Simon Welchman - Director

REVIEW OF FLUORIDE EMISSIONS AND EFFECTS:

AIR QUALITY IMPACT ASSESSMENT FOR THE PROPOSED BAYSWATER B POWER STATION PROJECT, Appendix D, Katestone Environmental Pty Ltd (September 2009)

Prepared for AECOM Ltd

by

D. Doley

9 November 2009

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Summary

- The Air Quality Impact Assessment for the Proposed Bayswater B Power Station Project prepared by Katestone Pty Ltd evaluated the effects of fluoride on vegetation (specifically the Arrowfield vineyard) using procedures that are considered to be valid and reasonable.
- Background atmospheric fluoride concentrations to the north-west of the proposed power station appear to be about 0.15 $\mu g/m^3$ during the grapevine growing season.
- Predictions of ground level fluoride concentrations included a 40% overestimate of the likely rate of fluoride emission from the power station. Adjustment for this overestimate brings ground level conditions below criterion concentrations at several but not all sensitive receptors.
- Exceedence of the 24-hour air quality criterion at the Arrowfield vineyard is not considered to be problematic for grapevine functioning. The predicted maximum 90-day average fluoride concentration at this site is close to the air quality criterion of 0.25 $\mu g/m^3$ for sensitive land use but if the most likely rate of fluoride emission from the power station is used, the maximum 90-day ambient fluoride concentration should be about 0.2 $\mu g/m^3$. Predicted foliar fluoride concentrations in the Arrowfield vineyard at the end of the grapevine growing season (21 to 27 mg/kg) are well below the concentration (80 mg/kg) that is accepted as the threshold for adverse effects on the health of grapevines or on the yield or quality of fruit.
- Ground level fluoride concentrations may exceed some of the criterion values for sensitive land use in portions of the Muswellbrook-Denman vineyard area but it is considered that these exceedences are not likely to result in a detectable reduction in grape yield or quality. The Roxburgh, Windmill and Callatooda vineyards and another near Denman township may be exposed to 90-day average ambient fluoride concentrations that exceed the criterion value of 0.25 $\mu g/m^3$. Estimates of possible grapevine foliar fluoride concentrations at the end of the fruiting season in February are up to 75 mg/kg in the Roxburgh vineyard, or 60 mg/kg if the most realistic rate of fluoride emission is adopted. These concentrations are less than the recognised threshold of 80 mg/kg for the occurrence of adverse effects on grape yield or quality.
- Fluoride accumulation in ungrazed pastures could result in concentrations that exceed ANZEC goals but where management practices prevent the development of rank pasture growth, this should not occur.
- It is considered very unlikely that there would be material adverse effects of 90-day average ground level fluoride concentrations of 0.5 to 0.6 $\mu g/m^3$ on the condition of olive trees or the yield of olives.
- It is considered very unlikely that there would be material adverse effects of 90-day average ground level fluoride concentrations of 0.5 to 0.6 $\mu g/m^3$ on the activities of residents of the Roxburgh district.

1. Fluoride in the environment

1.1. Fluoride is an air contaminant that has effects on animals and plants through interference with the metabolism of calcium and magnesium, with the functioning of enzymes and with the construction of cell components (Shupe et al. 1983, Weinstein and Davison 2004). In contrast, a lack of fluoride in humans is very commonly associated with an increase in dental caries, with the result that fluoride is added to the water supplies of many areas to provide a concentration of approximately 1 mg/litre. Humans ingest fluoride mainly through food and liquid intake, especially water and tea. There are very few recent reports of humans being affected by inhalation of fluoride or by absorption through the skin (Shupe et al. 1983). Grazing animals may ingest fluoride from pastures that have accumulated fluoride from the air or from the application of fluoride-containing fertilisers and forage fluoride guidelines have been developed to protect animals at sensitive growth stages (Weinstein and Davison 2004).

1.2. Plant species are affected adversely at ground level fluoride concentrations that may be 100 or 1000 times lower than those that cause adverse effects in humans and other animals (Weinstein and Davison 2004). As a result, the environmental goals for fluoride in Australia developed by the Australia and New Zealand Environment Council (1990) were based on its effects on plants rather than on humans or other animals. In recognition that plant species vary in their sensitivity to fluoride, the ANZEC guidelines established three categories of land use, each with different goal concentrations for a range of averaging times.

1.2.1. The general land use category was designed to protect most plant species and plant-based activities from material harm. Compliance with the general land use air quality criterion does not guarantee an absence of visible injury to fluoride sensitive plant species but the extent of this injury is likely to be limited (Doley 2009).

1.2.2. In recognition of their sensitivity to fluoride, grapevines and stone fruit species were assigned to a sensitive land use category for which the goals for ground level fluoride concentrations were one-half of those for the general land use category. The criteria for different averaging times are set out in the Air Quality Assessment, Appendix D, Table 11 (Katestone 2009).

1.2.3. A third land use category, for conservation areas, was created to preserve pristine or wilderness areas and to take account of the possibility that there may be some threatened plant species with exceptional sensitivity to fluoride but which were not yet known to be so sensitive (ANZEC 1990).

2. Basis for assessment

2.1. The Air Quality Assessment (Katestone 2009) assumes that fluoride is emitted from the power station stack at a concentration of 50 mg/m^3. This concentration is approximately 40% greater than the actual concentrations recorded from operating stations of design equivalent to the proposed station, so it represents a conservative estimate for the purpose of modelling. The modelled contribution of the new source to ambient fluoride concentrations predicted by the modelling would be expected to exceed the most likely contribution by up to 40%.

2.2. The Air Quality Assessment (Katestone 2009) takes the position that the ANZEC (1990) Air Quality Goals for Fluoride were intended to apply to gaseous fluoride and it conducted the analysis on the assumption that the gaseous component of emissions was intended to be assessed against the impact assessment criteria.

2.3. The position adopted in the Air Quality Assessment is endorsed as reasonable for the situation in the Hunter Valley, where the particulate emissions from power

stations, aluminium smelters or ceramics kilns are most likely to be compounds of low solubility and therefore of limited availability to plants.

2.4. This position adopted in the Air Quality Assessment is further supported by the occurrence of usually more than 90% of the fluoride in the gaseous component at two ambient monitoring sites (Katestone 2009, Appendix D, Table 42).

2.5. It was the intention of some contributors to the development of the ANZEC goals for fluoride in air (Doley 1987) that the objective should be to manage the portion of fluoride that exerted biological effects, that is, the gaseous component. However, the absence of a definition of bioavailable fluoride has resulted in many environmental assessments being made on total fluoride (gaseous plus particulate).

2.6. I consider that this Air Quality Assessment has performed a valuable function in drawing attention to the need to address the ambiguity of the air quality criteria for fluoride.

3. Background conditions

3.1. For several months during 2004 and for the five or six months of the grapevine growing season of 2004/05, 2006/07 and 2007/08, ambient gaseous and particulate fluoride concentrations were measured at two locations in the area, Ravensworth and Mitchell Line Road (Katestone 2009, Appendix D, Table 42).

3.2. Except for four occasions during 2004 and one occasion each in 2005, 2006 and 2007, the particulate fluoride concentrations at Ravensworth were at or below 0.01 $\mu g/m^3$, which is the detection and recording limit for the measurement method (Figure 1). For the shorter period of recording at Mitchell Line Road, only one month had a particulate fluoride concentration greater than 0.01 $\mu g/m^3$. The reason for the early variation in particulate fluoride concentration at Ravensworth cannot be determined, but the occurrence of most elevated concentrations during winter and spring suggests that locally generated dust may have been the source.

3.3. During the summer vegetative growing seasons (September to March) of the years under review, particulate fluoride concentrations at Ravensworth and Mitchell Line Road were almost invariably low (Figure 1). I consider that it is appropriate for the Air Quality Assessment to have been made on the gaseous component of ambient fluoride.

3.4. Figure 2 shows the mean ambient gaseous fluoride concentrations at Ravensworth and Mitchell Line Road during the grapevine growing seasons (September to February) of 2004/05, 2006/07 and 2007/08. The mean values were derived from monthly samples. For the 2004/05 growing season, data were available for five months and for the other seasons a six-month average was obtained.

3.5. Statistical analyses (t-test) showed that the seasonal mean concentrations at Ravensworth and Mitchell Line Road in 2006/07 and 2007/08 were not significantly different ($P>0.25$). This result suggests that the observations describe the background condition, especially because Ravensworth is located about 10 km to the south-east and Mitchell Line Road about 30 km to the north-west of the Bayswater and Liddell power stations.

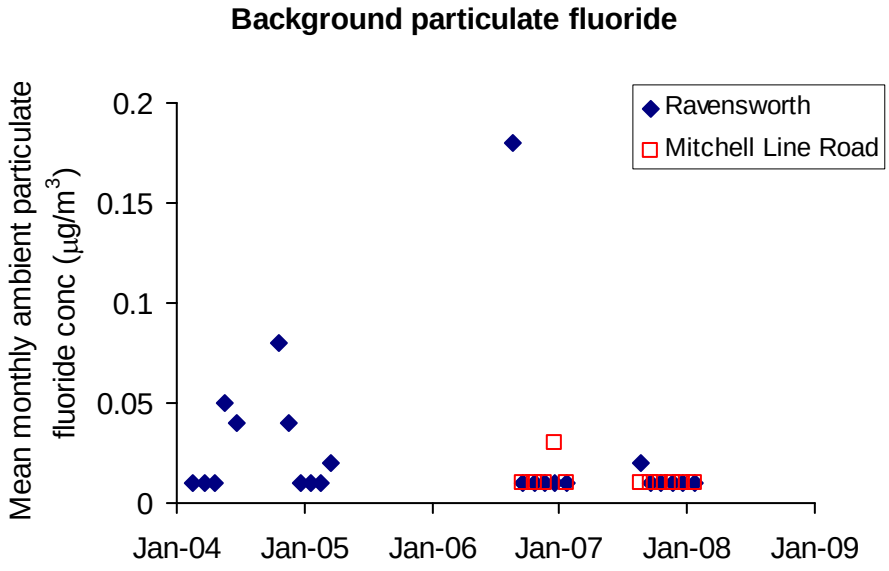

Figure 1. Mean monthly ambient particulate fluoride concentrations between 2004 and 2008 at Ravensworth and Mitchell Line Road. The detection and reporting limit for the method is 0.01 µg/m^3. Data from Katestone (2009), Appendix D, Table 42.

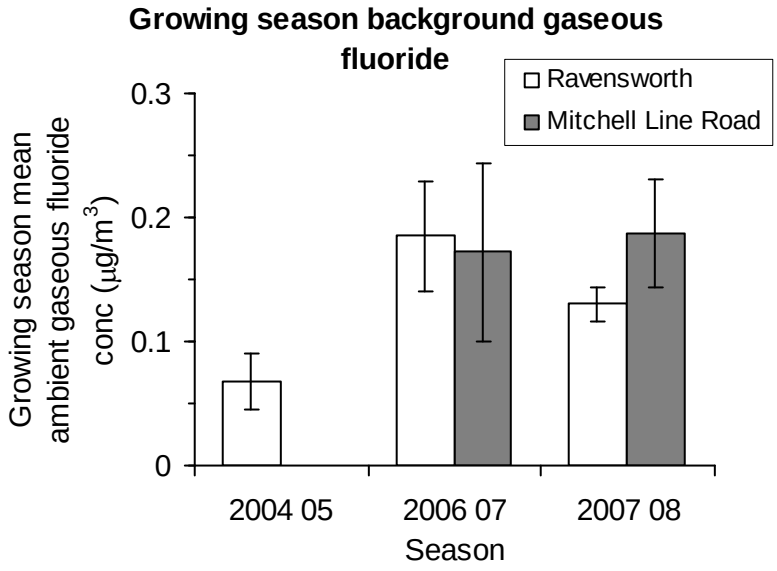

Figure 2. Mean gaseous ambient fluoride concentrations for the grapevine growing season (September to March) in 2004/05, 2006/07 and 2007/08 at Ravensworth and Mitchell Line Road. The vertical bars indicate the standard error of the mean. Note that the 90-day criterion value for atmospheric fluoride in a vineyard area is 0.25 µg/m^3. Data derived from Katestone (2009), Appendix D, Table 42.

3.6. Figure 3 shows that the seasonal patterns of gaseous fluoride concentration differ between the two sites and also vary between years. At Ravensworth, there was substantial short-term variation in 2004 and 2005, but apart from high values in September and October 2006, the 30-day average ambient fluoride concentrations were mostly around 0.15 μg/m^3 during the growing seasons in 2006/07 and 2007/08. In contrast, at Mitchell Line Road there were distinct increases in ground level fluoride concentration between September and January in both 2006/07 and 2007/08.

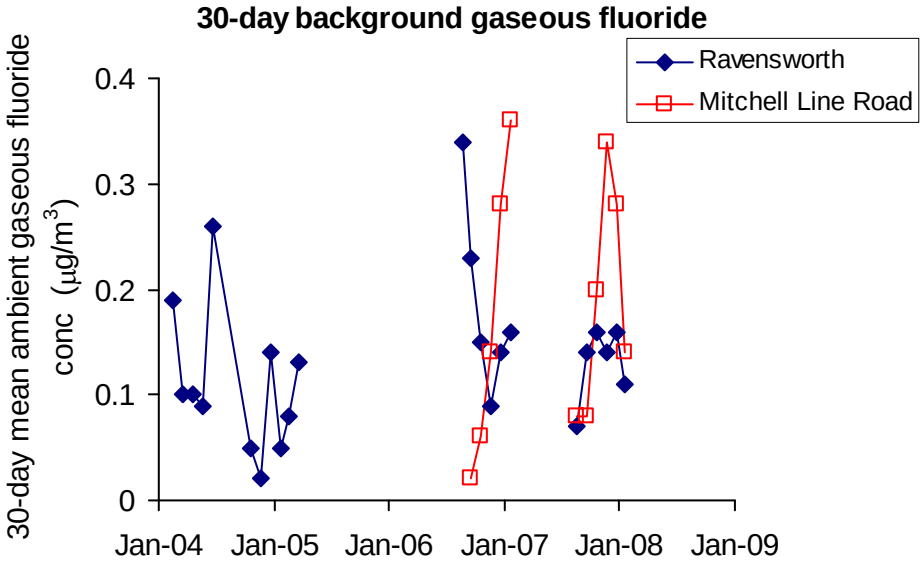

Figure 3. Thirty-day average gaseous ambient fluoride concentrations between 2004 and 2008 at Ravensworth and Mitchell Line Road. Note that the 30-day criterion value for atmospheric fluoride in a vineyard area is 0.4 μg/m^3. Date from Katestone (2009), Appendix D, Table 42

3.7. Figure 4 presents rolling 90-day average concentrations for gaseous fluoride concentration at Ravensworth and Mitchell Line Road. The averages are derived from the 30-day values shown in Figure 3 and are plotted at the end of the averaging period. This procedure was used to assess the effects of ambient fluoride in the lower Hunter Valley vineyards (Doley et al. 2003) and provides the most conservative method of describing long-term exposure conditions.

3.8. For vineyards, the effective period of exposure is while physiologically active leaves are carried on the vines, that is, from October to March. Exposure to gaseous fluoride has very little effect on dormant grapevines.

3.9. At Ravensworth, apart from a high value in September 2006, there was little variation in 90-day average ambient fluoride concentration around 0.15 μg/m^3 during either growing season but at Mitchell Line Road there was a distinct increase in both 2006/07 and 2007/08 between September and February and the criterion value for sensitive land use of 0.25 μg/m^3 was exceeded in both seasons.

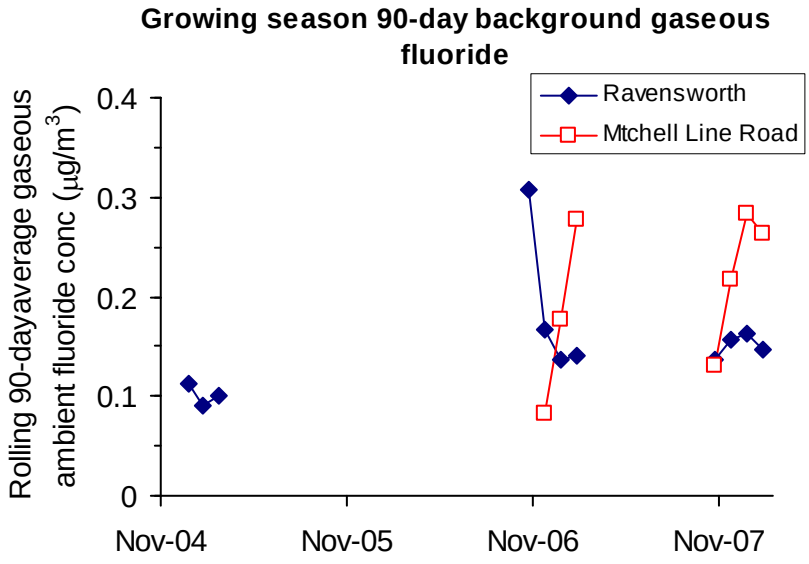

Figure 4. Ninety-day rolling average gaseous ambient fluoride concentrations for the grapevine growing season (September to March) in 2004/05, 2006/07 and 2007/08 at Ravensworth and Mitchell Line Road. Note that the 90-day criterion value for atmospheric fluoride in a vineyard area is 0.25 µg/m^3. Data derived from Katestone (2009), Appendix D, Table 42.

3.10. These two examples suggest that the ambient fluoride concentration is very dependent on seasonal wind patterns that may carry emissions from a source to a sensitive receptor. Ravensworth is located about 10 km to the south-east from the existing Liddell and Bayswater power stations whereas Mitchell Line Road is about 30 km to the north-west. The prevailing wind during summer is south-easterly, whereas in winter it tends to be from the north-west (Katestone 2009, Appendix D, Figure 18). Therefore, the local wind patterns may be critical to the exposure of a particular vineyard to emissions from a given source. Mitchell Line Road would be likely to receive fluoride emissions from Liddell and Bayswater during summer, whilst Ravensworth would be more likely to represent the regional background concentration at this time.

3.11. The Air Quality Assessment notes that “a specific air quality impact assessment criterion for conservation areas has been established for gaseous fluoride but not for any other air contaminant”. In this context, it is interesting to observe that the existing regional background concentration is likely to be about 0.15 µg/m^3 for at least several months every year, whereas the conservation area criterion is 0.10 µg/m^3 (ANZEC 1990).

3.12. Depending on the definition of land tenure to which the conservation air quality criterion is applied, it is possible that some reserves in the region may already not comply with the air quality criterion. The purpose for the criterion is the protection of vegetation health. Although this Air Quality Assessment does not address the health of native vegetation, it is appropriate to question whether the air quality criterion of 0.10 µg/m^3 is justified for conservation areas.

4. Fluoride exposure at Arrowfield Winery

4.1. I consider that the modelling of meteorological conditions and fluoride dispersion from the projected source to the sensitive receptor, Arrowfield Winery, has taken into account the factors that are likely to affect the transport of fluoride to that receptor. Consideration of the marked seasonality in prevailing wind direction is important, especially as Arrowfield is located to the south-west of the proposed source and is more likely to be exposed to emissions during the summer growing season than during winter.

4.2. Katestone (2009) Appendix D, Table 65 indicates that the maximum 24-hour average ambient gaseous fluoride concentration at Arrowfield is 2.88 $\mu g/m^3$ which is nearly double the air quality criterion. However, comparison of Katestone (2009) Figures 54 and 55 shows that the calculated background fluoride concentration is approximately 1.4 $\mu g/m^3$, or very close to the air quality criterion value. That is, even without the addition of another fluoride source, the 24-hour air quality could be regarded as compromised. Assuming that the increase in ambient fluoride concentration attributable to the proposed source is 40% less than the increase indicated in Figure 54, the best estimate of the ground level concentration due to the station is 1.0 $\mu g/m^3$. As a result, the short-term air quality criterion is likely to be exceeded by about 1.0 $\mu g/m^3$.

4.3. Notwithstanding the apparent short-term exceedance, I consider that it is not appropriate to place undue emphasis on the short-term air quality criteria for sensitive land uses, as each was set at half of the respective general land use criterion. Experimental observations of grape vines showed that much more than 24 hours' exposure of vines to gaseous fluoride concentrations of about 2 $\mu g/m^3$ was required to induce detectable fluoride accumulation (Doley 1984) or adverse effects on leaf growth (Doley 1986).

4.4. A further caveat relating to the maximum 24-hour average fluoride concentration is that it is effective on grapevines only while the leaves are carried on the vines. Therefore, for this purpose, but not necessarily for native or other evergreen vegetation, it would be appropriate to consider maximum 24-hour concentrations only during the vegetative growing season between September and March.

4.5. The predicted maximum 7-day average ambient fluoride concentration at Arrowfield (0.44 $\mu g/m^3$) is slightly more than half of the criterion value (0.8 $\mu g/m^3$) (Katestone 2009, Appendix D, Table 65). Therefore, it is considered that there is no environmental risk at this averaging time.

4.6. The maximum 30-day average ambient fluoride concentration at Arrowfield (0.31 $\mu g/m^3$) is predicted to be slightly more than three-quarters of the criterion value (0.4 $\mu g/m^3$) (Katestone 2009, Appendix D, Table 65). Therefore, it is considered that there is no environmental risk at this averaging time.

4.7. The predicted maximum 90-day average ambient fluoride concentration at Arrowfield (0.24 $\mu g/m^3$) is close to the criterion value (0.25 $\mu g/m^3$) (Katestone 2009 Appendix D, Table 65). This value includes a background fluoride concentration of 0.15 $\mu g/m^3$ at Ravensworth (Figure 3) is indicative of the background concentration at Arrowfield. If the predicted ambient concentration at Arrowfield includes a 40% over-estimate of fluoride emission from the proposed source, the best estimate of the maximum 90-day average ambient fluoride concentration at Arrowfield might be about 0.2 $\mu g/m^3$. This concentration is below the criterion value for sensitive land use.

4.8. Murray (1984) observed no adverse effects in grapevines at Pokolbin maintained at an growing season ambient fluoride concentration of 0.28 μg/m^3. Monitoring in 12 vineyards in the Lower Hunter Valley over five growing seasons identified no adverse effects on grapevine health or production where the 90-day average ground level fluoride concentrations was about 0.2 μg/m^3 (Doley et al. 2003).

4.9. Therefore, it is considered that the 90-day ground level fluoride concentrations that can be expected to occur at the Arrowfield Winery should not lead to adverse effects on grapevines.

4.10. Taylor et al. (2003) reported fluoride concentrations in grapevine leaves at the end of the growing season (February) between 1990 and 2003 at seven locations, including Arrowfield, which were influenced by Liddell power station. The range of concentrations at Arrowfield was 2 to 13 mg/kg, compared to 8 to 53 mg/kg at Edinglassie and 1 to 15 mg/kg at Verona vineyard, 20 km north-west from Liddell power station and about 2km from the Mitchell Line Road monitoring station. Although the ranges of fluoride concentrations at Arrowfield and Verona were similar, in any year, there was no consistent relationship between the foliar fluoride concentrations in the two vineyards.

4.11. Doley et al. (2003) estimated the rates of increase in grapevine foliar fluoride concentration in relation to ambient fluoride concentration and exposure time. The rates of fluoride accumulation varied substantially between vineyards and grape varieties, but a median rate of fluoride accumulation can be identified as 0.7 mg/kg per 1.0 μg/m^3 per day.

4.12. By applying the rate of fluoride accumulation (Paragraph 4.11) to the predicted maximum 90-day ambient fluoride concentration at Arrowfield (Paragraph 4.7), it might be anticipated that grapevine foliar fluoride concentrations might reach 27 mg/kg by the end of the growing season (Table 1). If the fluoride emissions from the proposed power station are reduced by 40%, then the end-of-season foliar fluoride concentration may reach 21 mg/kg.

Table 1. Estimated fluoride concentration in grapevine leaves in February, using the Katestone (2009) assumptions of 90-day average ground level fluoride concentrations derived from Figure 5 and a rate of fluoride uptake of 0.7 mg/kg per μg F/m^3 per day. The modelled adjusted ambient fluoride concentrations assume that the Katestone model overestimated new fluoride emissions and their contribution to ground level concentrations by 40 per cent.

	Katestone modelled		Modelled adjusted	
Vineyard	Ambient Fluoride μg/m^3	Foliar Fluoride mg/kg	Ambient Fluoride μg/m^3	Foliar Fluoride mg/kg
Arrowfield	0.25	27	0.2	21
Edinglassie	0.4	43	0.32	34
Roxburgh	0.7	74	0.56	60
Windmill	0.5	53	0.4	43
Callatooda	0.4	43	0.32	34

4.13. In the lower Hunter Valley vineyards, Leece et al. (1982, 1983) and Doley et al. (2003) could find no evidence of adverse effects on the health or functioning of grapevines of late-season foliar fluoride concentrations of 25 to 30 mg/kg. Visible

injury to grapevine leaves may be associated with foliar fluoride concentrations as low as 20 mg/kg (Greenhalgh and Brown 1982) and up to 150 mg/kg (Doley 1984), Leece et al. (1983) indicated that foliar fluoride concentrations of less that 50 mg/kg were not associated with adverse effects on grapevine growth or yield and that concentrations in excess of 80 mg/kg might be required before reductions in grape yield and vine vigour were observed.

4.14. It is concluded that an increase in 90-day average ambient fluoride concentration to about 0.25 $\mu g/m^3$ is unlikely to have any detectable adverse effect on the functioning of grapevines or on the yield or quality of the grapes at the Arrowfield vineyard.

5. Vineyards in the Muswellbrook-Denman area

5.1. Vineyard areas to the north-west of the proposed power station are shown in Figure 5, together with approximate locations of the areas predicted by Katestone (2009), Appendix D, Figure 58, to be exposed to maximum 90-day average ground level fluoride concentrations greater than 0.25 and 0.5 $\mu g/m^3$. The following comments address concerns raised by respondents to the Environmental Assessment or by the Environment Committee.

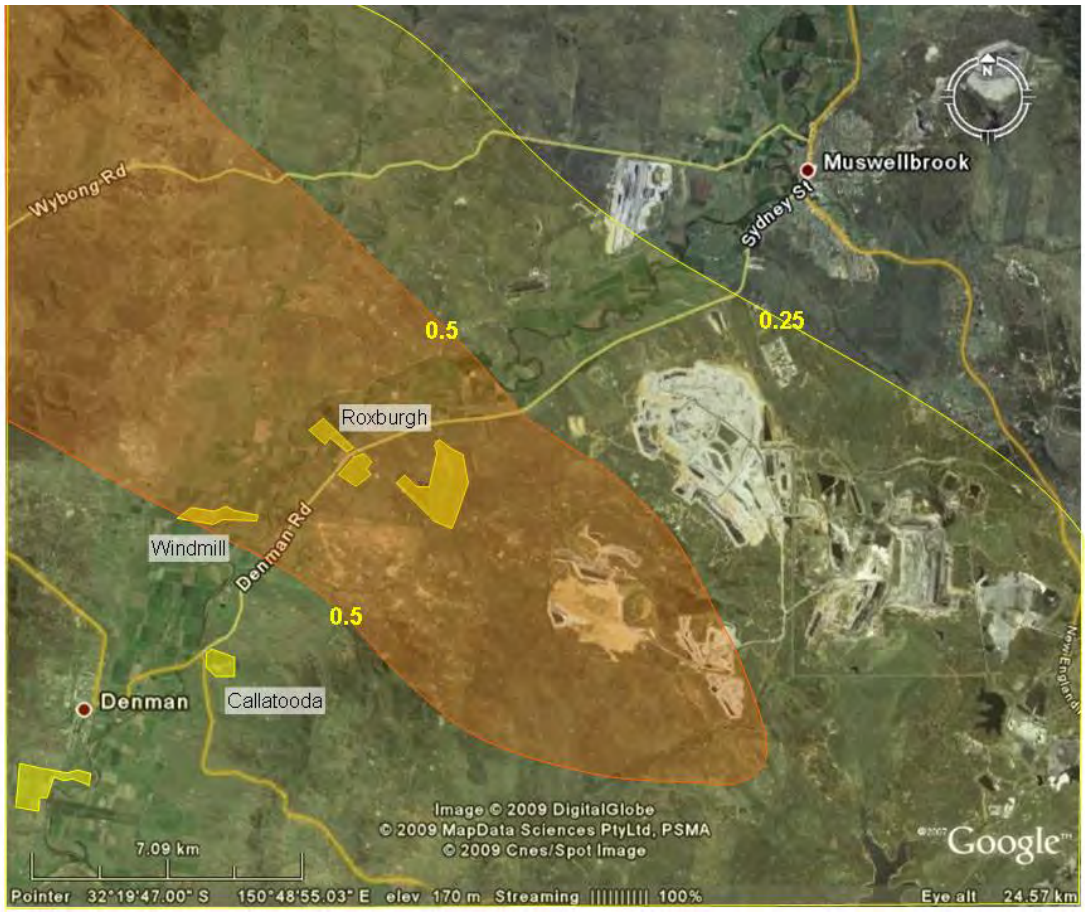

Figure 5. Locations of vineyards in the Muswellbrook-Denman area with approximate locations of the areas predicted by Katestone (2009), Appendix D, Figure 58, to experience maximum 90-day average ground level fluoride concentrations greater than 0.25 and 0.5 $\mu g/m^3$.

5.2. Edinglassie. The land use at Edinglassie has changed since Taylor et al. (2003) recorded February foliar fluoride concentrations in grapevine leaves of 8 to 53 mg/kg.

5.2.1. The vines have been removed entirely and a horse stud has been established, so the land use category has altered from sensitive to general. The 90-day average ambient fluoride concentration is expected to be between 0.35 and 0.45 $\mu g/m^3$ (Katestone 2009, Appendix D, Figure 58). Consequently, the predicted ground level fluoride concentrations are below the criterion values for all averaging times between 24 hours and 90 days.

5.2.2. The maintenance of grazing animals on the area requires that the goals for fluoride in forage established by ANZEC (1990) should be considered. The maximum permitted average fluoride concentration for a single month is 80 mg/kg, for a two-month averaging period it is 60 mg/kg and for a three-month averaging period it is 40 mg/kg.

5.2.3. No data are immediately available on the patterns of variation in forage fluoride concentration in the Muswellbrook-Denman area. As a first approximation, it could be assumed that the rate of accumulation of fluoride by pasture grasses will be similar to the rate for grapevine leaves, which are shown in Table 1. If this assumption is adopted, then fluoride concentrations of up to 60 mg/kg may be reached by the end of the summer growing season in the first-produced components of pasture.

5.2.4. The pasture fluoride concentration might be expected to increase progressively during the growing season, assuming that it is not grazed or cut. On the other hand, the continual addition of new foliage to the pasture will tend to reduce the average age of leaves and the average fluoride concentration below the indicative values presented in Table 1. Therefore, the estimates in Table 1 represent the upper end of the likely range of fluoride concentrations that should occur in the field and the risk that fluoride in forage criteria may be exceeded is consequently diminished.

5.2.5. Consideration of pasture fluoride concentration should also take into account the proportion of animal diet that is provided by the pastures. For example, if half of the diet is hay or grain brought in from an area completely free from fluoride exposure, then the contribution of fluoride-containing paddock pasture will be half of the amount if the animals were completely dependent on pasture and it can be argued that the allowable fluoride concentration in the pasture should be doubled.

5.2.6. The combination of factors influencing pasture growth and fluoride uptake leads to the conclusion that fluoride accumulation in improved pastures subjected to regular grazing or cutting is not likely to result in fluoride concentrations that exceed the ANZEC (1990) goals

5.3. Roxburgh Vineyard. This vineyard is located on the southern side of Denman Road, approximately 10 km north-east from Denman. It lies near the centre of the plume track from the proposed power station under conditions predicted to cause the highest ground level fluoride concentrations for averaging periods ranging from 24 hours to 90 days. For the 90-day averaging period, Katestone (2009), Appendix D, Figure 58, predict that the maximum 90-day fluoride concentration will exceed 0.5 $\mu g/m^3$ (Figure 5) by an amount that cannot be interpolated from the data available. The ambient fluoride concentration in Table 1 was estimated from the location of the vineyard and the rate of change in fluoride concentrations with distance near the 0.5 $\mu g/m^3$ criterion value in Katestone (2009) Appendix D,

Figure 58. It is considered likely that the ground level fluoride concentration would still likely to exceed 0.5 $\mu g/m^3$ if an allowance is made for a 40% overestimate of fluoride emissions from the proposed power station (Table 1).

5.4. Windmill vineyard. From my interpolation of the data in Katestone (2009), Appendix D, Figure 58, this property could potentially be exposed to a maximum 90-day average ground level fluoride concentration of about 0.5 $\mu g/m^3$ (Figure 5). If the modelled ground level concentration is based on an overestimate of fluoride emission, the 90-day average ground level fluoride concentration at the Windmill vineyard would be about 0.4 $\mu g/m^3$ (Table 1). This concentration exceeds the criterion value for vineyards of 0.25 $\mu g/m^3$.

5.5. Callatooda vineyard and others adjacent to Denman township. These properties are located in the area potentially subjected to a maximum 90-day average ground level fluoride concentration of about 0.4 $\mu g/m^3$ (Katestone 2009, Appendix D, Figure 58). If an adjustment is made for a 40% overestimate of fluoride emissions from the power station, the 90-day average ground level fluoride concentrations in this area are likely to be about 0.3 $\mu g/m^3$ and therefore still in excess of the criterion value of 0.25 $\mu g/m^3$ (Table 1).

5.6. Possible grapevine foliar fluoride concentrations. Using the assumptions in Paragraph 4.11, and 90-day average ground level fluoride concentrations interpolated from Figure 5, it is possible to estimate grapevine foliar fluoride concentrations in February at selected vineyards in the Muswellbrook-Denman area, as indicated in Table 1.

5.7. Possible consequences of fluoride accumulation in grapevines. Using the associations between foliar fluoride concentration and grapevine yield established by Leece et al. (1983) and summarised in Paragraph 4.12, the Arrowfield and Callatooda vineyards should not exhibit any adverse effects from fluoride exposure. While the Windmill and Roxburgh vineyards may unadjusted exhibit foliar fluoride concentrations greater than 50 mg/kg (Table 1), the predicted concentrations are clearly less than the 80 mg/kg that Leece et al. (1983) considered to be the threshold for adverse effects of fluoride on grapevine yield.

5.8. Therefore, although the predicted 90-day average ground level fluoride concentrations at several vineyards in the Muswellbrook-Denman area exceed the criterion value for sensitive land use, an authoritative assessment (Leece et al. 1983) suggests that there is not likely to be an adverse effect on grapevine production at these vineyards.

6. **Other land uses in the Muswellbrook-Denman area**

6.1. The following comments address concerns raised by respondents to the Environmental Assessment or by the Environment Committee.

6.2. Roxburgh rural district. This area, located north of the Hunter River and west of the Bengalla mine, is occupied by rural residential holdings. From an inspection of satellite imagery, it was concluded that no sensitive land use is being pursued in this area. Therefore, the general land use criteria for fluoride apply. The predictions by Katestone (2009), Appendix D, Figures 55-58, suggest that the maximum ground level fluoride concentrations may range from about half of to slightly greater than the criterion concentrations for averaging periods between 24 hours and 90 days. It is not possible to estimate the extent of exceedence of the 90-day general land use criterion value at every location n the district. Therefore, the potential effects on vegetation or the mitigating effect of adopting the most likely rate of fluoride emission from the proposed power station can not be

indicated precisely but it may be expected that fluoride sensitive plant species will exhibit some visible injury (Doley 2009).

6.3. Pukara Olive Grove: Olives are known to be very tolerant of fluoride (Doley et al. 2004) and they should not, in my opinion, be considered as a sensitive agricultural crop. Even if the olive orchard location was predicted to be exposed to 90-day average ground fluoride concentrations greater than 0.5 $\mu g/m^3$, I consider that the health of the trees and yield of fruit are unlikely to be affected adversely by fluoride.

7. Conclusions

7.1. The Air Quality Impact Assessment for the Proposed Bayswater B Power Station Project evaluated the effects of fluoride on vegetation (especially the Arrowfield vineyard) using procedures that are valid and reasonable.

7.2. The selection of averaging times for fluoride exposure is in accordance with the air quality criteria.

7.3. While the 24-hour air quality criterion is predicted to be exceeded at the Arrowfield vineyard, such an exceedance is not considered to be become problematic for grapevine functioning even if it occurs during the growing season.

7.4. The predicted maximum 90-day average fluoride concentration at Arrowfield vineyard is close to the air quality criterion for sensitive land use (e.g. vineyards). It is considered that, because of the conservative modelling, the actual exposure is likely to be less than the prediction and that the maximum 90-day ambient fluoride concentration at Arrowfield should not reach 0.25 $\mu g/m^3$. This would achieve compliance with the air quality criterion.

7.5. Foliar fluoride concentrations in the Arrowfield vineyard at the end of the grapevine growing season that may be associated with the predicted ambient fluoride concentrations are considered to be well below the concentration that is accepted as the threshold for adverse effects on the health of grapevines or on the yield or quality of fruit.

7.6. In response to submissions concerning the Air Quality Impact Assessment, it is recognised that the Roxburgh vineyard may be exposed to 90-day average ambient fluoride concentrations that exceed 0.5 $\mu g/m^3$. The Windmill, Callatooda vineyard and another near Denman township may be exposed to 90-day average ambient fluoride concentrations that exceed 0.25 $\mu g/m^3$. These exposures are likely to occur during the growing season in association with the prevailing wind directions during summer.

7.7. Estimates of possible grapevine foliar fluoride concentrations suggest that the highest concentrations at the end of the fruiting season in February are likely to be about 65 mg/kg in the Roxburgh vineyard, or 51 mg/kg if the most realistic rate of fluoride emission is adopted. These concentrations are clearly less than the value of 80 mg/kg, which is considered to be the threshold for the occurrence of adverse effects on grape yield or quality.

7.8. Ground level fluoride concentrations may exceed some of the criterion values for sensitive land use in portions of the Muswellbrook-Denman vineyard area but it is considered that these exceedences are not likely to result in a detectable reduction in grape yield or quality.

7.9. Fluoride accumulation in ungrazed pastures could result in concentrations that exceed ANZEC goals. Where management practices prevent the development of rank pasture growth, it is concluded that fluoride concentrations in forage should not exceed the ANZEC goal values. Supplementary feeding will further reduce the average fluoride concentration of animal diets and thereby the risk of adverse effects.

7.10. It is considered very unlikely that there would be adverse effects of 90-day average ground level fluoride concentrations of 0.5 to 0.6 $\mu g/m^3$ on the condition of olive trees or the yield of olives.

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Number of exceedences of the 1 hour average SO_2 criteria at all sensitive receptors for 300 m coal fired option for 1999

1999	Total number of exceedences					Number of additional exceedences	
	Bayswater B only (modelled)		Bayswater B (modelled) + measured background		Measured	Average sulphur coal scenario	Maximum sulphur coal scenario
	Average sulphur coal scenario	Maximum sulphur coal scenario	Average sulphur coal scenario	Maximum sulphur coal scenario			
R1	0	0	1	1	1	0	0
R3	0	0	2	2	2	0	0
R4	0	0	2	2	2	0	0
R5	0	0	1	1	1	0	0
R6	0	0	1	1	1	0	0
R7	0	0	12	12	12	0	0
R8	0	0	12	12	12	0	0
R9	0	0	0	0	0	0	0
R10	0	0	0	0	0	0	0
R11	0	0	0	0	0	0	0
R12	0	0	0	0	0	0	0

Number of exceedences of the 1 hour average SO_2 criteria at all sensitive receptors for 300 m coal fired option for 2000

2000	Total number of exceedences					Number of additional exceedences	
	Bayswater B only (modelled)		Bayswater B (modelled) + measured background		Measured	Average sulphur coal scenario	Maximum sulphur coal scenario
	Average sulphur coal scenario	Maximum sulphur coal scenario	Average sulphur coal scenario	Maximum sulphur coal scenario			
R1	0	0	0	0	0	0	0
R3	0	0	0	0	0	0	0
R4	0	0	0	0	0	0	0
R5	0	0	0	0	0	0	0
R6	0	0	0	0	0	0	0
R7	0	0	1	1	1	0	0
R8	0	0	1	1	1	0	0
R9	0	0	2	2	1	1	1
R10	0	0	1	1	1	0	0
R11	0	0	0	0	0	0	0
R12	0	0	1	1	1	0	0

Number of exceedences of the 1 hour average SO_2 criteria at all sensitive receptors for 300 m coal fired option for 2007

2007	Total number of exceedences					Number of additional exceedences	
	Bayswater B only (modelled)		Bayswater B (modelled) + measured background		Measured	Average sulphur coal scenario	Maximum sulphur coal scenario
	Average sulphur coal scenario	Maximum sulphur coal scenario	Average sulphur coal scenario	Maximum sulphur coal scenario			
R1	0	0	1	2	1	0	1
R2	0	0	0	0	0	0	0
R4	0	0	0	1	0	0	1
R5	0	0	1	1	1	0	0
R6	0	0	1	1	1	0	0
R7	0	0	0	0	0	0	0
R8	0	0	1	1	0	1	1
R9	0	0	5	5	5	0	0
R10	0	0	5	5	5	0	0
R11	0	0	0	0	0	0	0
R12	0	0	5	5	5	0	0

Number of exceedences of the 10 minute average SO_2 criteria at all sensitive receptors for 300 m coal fired option for 1999

1999	Total number of exceedences					Number of additional exceedences	
	Bayswater B only (modelled)		Bayswater B (modelled) + measured background		Measured	Average sulphur coal scenario	Maximum sulphur coal scenario
	Average sulphur coal scenario	Maximum sulphur coal scenario	Average sulphur coal scenario	Maximum sulphur coal scenario			
R1	0	0	4	4	4	0	0
R3	0	1	5	7	5	0	2
R4	0	2	5	7	5	0	2
R5	0	1	4	5	4	0	1
R6	0	1	5	5	4	1	1
R7	0	0	18	20	17	1	3
R8	0	0	17	18	17	0	1
R9	0	0	0	0	0	0	0
R10	1	2	1	2	0	1	2
R11	0	0	0	0	0	0	0
R12	1	2	2	2	0	2	2

Number of exceedences of the 10 minute average SO_2 criteria at all sensitive receptors for 300 m coal fired option for 2000

2000	Total number of exceedences					Number of additional exceedences	
	Bayswater B only (modelled)		Bayswater B (modelled) + measured background		Measured	Average sulphur coal scenario	Maximum sulphur coal scenario
	Average sulphur coal scenario	Maximum sulphur coal scenario	Average sulphur coal scenario	Maximum sulphur coal scenario			
R1	0	1	1	2	1	0	1
R3	0	0	1	2	0	1	2
R4	0	0	0	2	0	0	2
R5	0	0	2	2	1	1	1
R6	0	0	1	1	1	1	1
R7	0	4	2	6	2	0	4
R8	0	2	2	4	2	0	2
R9	0	0	4	4	3	1	1
R10	0	0	3	3	3	0	0
R11	0	0	0	0	0	0	0
R12	0	0	4	4	3	1	1

Number of exceedences of the 10 minute average SO_2 criteria at all sensitive receptors for 300 m coal fired option for 2007

2007	Total number of exceedences					Number of additional exceedences	
	Bayswater B only (modelled)		Bayswater B (modelled) + measured background		Measured	Average sulphur coal scenario	Maximum sulphur coal scenario
	Average sulphur coal scenario	Maximum sulphur coal scenario	Average sulphur coal scenario	Maximum sulphur coal scenario			
R1	0	0	4	4	3	1	1
R2	0	2	3	4	1	2	3
R4	1	2	3	5	1	3	4
R5	1	2	5	6	3	2	4
R6	0	0	3	5	3	0	2
R7	0	0	3	4	3	0	1
R8	0	0	3	4	3	0	1
R9	0	1	7	7	7	0	0
R10	1	1	8	8	7	1	1
R11	0	0	0	0	0	0	0
R12	0	0	7	7	7	0	0

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Appendix C

Additional Aboriginal Consultation

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Record of Meeting Attendance

Aboriginal Consultation Meeting
9 September 2009, Bayswater Power Station

Report given

Bayswater B Power Station Aboriginal Heritage Assessment

	Name	Organisation	Contact Number
✓	Neville Baker	AECOM	
✓	Michele Stair	Giwirr Consultants	
✓	KATHIE STEWARD KINCHELA	GINARR CULTURAL SERVICES	
✓	SUZIE WORTH	Wanaruah LALC.	
✓	John MATTHEWS	HVCC.	
✓	MARGARET MATTHEWS	ANTC	
✓	Katrina Cavanagh	WWCS	
✓	LUKE HICKEY	HVCS	
✓	CLIFF MATTHEWS	MINGGA CON	
✓	MICHAEL MATTHEWS	H.V.H.C	
✓	Daniel Matthews	H.V.H.C	
✓	Georgina Berry	~~UHVC~~ Cultwally Aware (as per phone conversation + emails 11/9/09) N.S.	
	Rich Bullers	AECOM	
	Peter Bowman	Macquarie Generation	

Consulting about Aboriginal Heritage Values Proposed Bayswater B Power Station

Aboriginal Heritage Assessment

Aboriginal Stakeholder Consultation Meeting

9 September 2009

Bayswater Power Station Education Centre & Site Visit

Welcome…

AECOM

- Agenda for Today's Meeting
  - 09.00 welcome & induction (MACGEN)
  - 10.00 powerpoint presentation on Aboriginal site survey and assessment (AECOM – Neville Baker & Rick Bullers)
  - 10.30 discussion (ALL)
  - 11.00 site visit – driving to the proposed power station site and visiting key sites along Saltwater Creek
  - 12.30 discussion in-field with lunch
  - 14.00 sign-out (indicative time)

Introductions & Induction

AECOM

- Peter Bowman, Environment Officer – Bayswater Power Station, Macquarie Generation

Part 3A Environmental Assessment

AECOM

- Macquarie Generation seeking “Concept Approval” under Part 3A of Environmental Planning and Assessment Act
- New Power Station to be built by another company (Gas or Coal fired)
- Section 90 approvals not required for impact to Aboriginal sites
- Aboriginal heritage assessment needs to include archaeological assessment and socio-cultural assessment
- Aboriginal stakeholders invited to submit a letter or report with Aboriginal cultural assessment of the land – or identify cultural values now

Proposed Development - Coal Fired Option

AECOM

Proposed Development – Gas Fired Option

AECOM

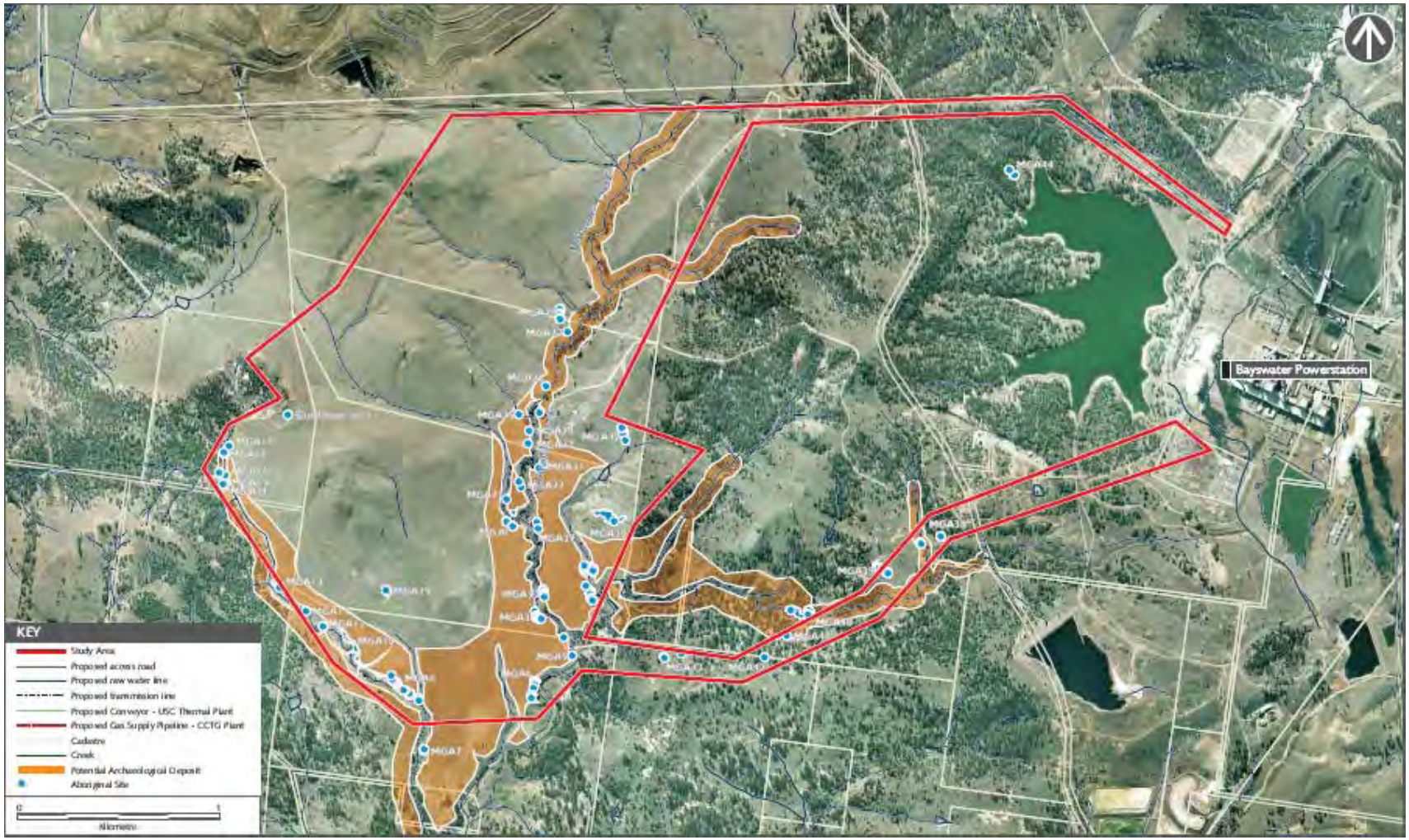
Aboriginal Sites

AECOM

- Survey conducted rapidly due to government project timeframe
- AECOM and Wanaruah LALC involved prior to formal registration of Aboriginal stakeholders
- 47 Aboriginal sites identified
- Large areas of potential archaeological deposit

Aboriginal Site Map with Potential Archaeological Deposit

AECOM



Identifying Heritage Values…

AECOM

- Today's meeting is "Consulting about Aboriginal heritage values"
- Do you agree with the following statements? (should we change the wording?)

- "Aboriginal heritage sites are of value to the Aboriginal community because…"
  - "…of the link they provide to the Aboriginal people in the past."
  - "…they are interesting and teach about past Aboriginal life."

- anything else to say here?

Significance Assessment

AECOM

- Two Aboriginal sites have high significance for the presence of rare grindstones
- All 45 other Aboriginal sites regarded as having moderate scientific significance for their contribution to understanding the archaeological landscape
- The extensive potential archaeological deposit in the southern flat are near Saltwater Creek is of high value for its potential to reveal large and complex sites
- What are the Aboriginal cultural values? Please let us know…

Commitments for Further Excavation

AECOM

- Only if the project goes ahead
- Will probably be organised by a private constructor (not Mac Gen)
- Test excavation in the southern flat area…
  - To work out how far buried artefacts extend
  - To locate key areas for open area salvage excavations
- Salvage Excavation in the southern flat area…
  - To be determined following test excavation
- Collect and set aside for other affected sites
  - Moving the artefacts to one side and leaving them on the land

Site Visit

AECOM

- First we will visit the area and view the land from a high point
- Second will visit a few key sites and typical sites accessible by vehicle
- Third we will return to a high area for discussion of heritage values
- Finally we will move to a suitable area for lunch and continue our discussion
- We will return around 2 pm
- Please use the amenities before we depart for site inspection

Fax Back Form : Fax to AECOM (Attn: Neville Baker) on 02 8484 8989

Bayswater B Power Station

Aboriginal Heritage Assessment 2009

Aboriginal Stakeholder Comments

I have read the draft report prepared by AECOM titled "Bayswater Liddell Power Generation Complex Environmental Assessment: Heritage" dated 8 September 2009.

I wish to make the following comments (*continue on new page if more space needed*):

1) The area is significant to Aboriginal people because:.....

.....

.....

.....

2) I have read the recommendations of the draft report and (tick box below)

☑ Agree

☐ Disagree because... .....

.....

3) I have read the significance assessment in the draft report and

☑ Agree

☐ Disagree because... .....

.....

4) Other comments: .....

.....

.....

.....

.....

(*use a new page if more space needed*)

Name..... michele Stair

Organisation: ..... Gawler Consultants

Signature: ..... Date: 16/9/09

Fax Back Form : Fax to AECOM (Attn: Neville Baker) on 02 8484 8989

Bayswater B Power Station

Aboriginal Heritage Assessment 2009

Aboriginal Stakeholder Comments

I have read the draft report prepared by AECOM titled "Bayswater Liddell Power Generation Complex Environmental Assessment: Heritage" dated 8 September 2009.

I wish to make the following comments (*continue on new page if more space needed*):

1) The area is significant to Aboriginal people because: high significance AND very RARE in the AREA are grindstones AND Sym ARTEFACTS distribution and density across the Larger project AREA tell us.

2) I have read the recommendations of the draft report and (tick box below)

☑ Agree

☐ Disagree because...

3) I have read the significance assessment in the draft report and

☑ Agree

☐ Disagree because...

4) Other comments: Agree IN Proposed Development for Gas Fired option However H.V.C.S. has great Concerns IN Regards to the rest of the proposed develment and are Requesting 100% Survey of Area's. Gas Piplines

(*use a new page if more space needed*)

Name: Luke Hickey

Organisation: H.V.C.S

Signature: Date:

Fax Back Form : Fax to AECOM (Attn: Neville Baker) on 02 8484 8989

Bayswater B Power Station

Aboriginal Heritage Assessment 2009

Aboriginal Stakeholder Comments

I have read the draft report prepared by AECOM titled "Bayswater Liddell Power Generation Complex Environmental Assessment: Heritage" dated 8 September 2009.

I wish to make the following comments (*continue on new page if more space needed*):

1) The area is significant to Aboriginal people because: .....
There is a lot of ABORIGINAL SIGNIFICANCE OF HERITAGE AND CULTURE IN THIS AREA.

2) I have read the recommendations of the draft report and (tick box below)

☑ Agree

☐ Disagree because .....

3) I have read the significance assessment in the draft report and

☑ Agree

☐ Disagree because .....

4) Other comments: WE RECOMMEND Some EXCAVATIONS MAINLY ALONG the Creek AREA'S

(*use a new page if more space needed*)

Name: Margaret MATTHEWS

Organisation: ABORIGINAL Native title CONSULTANTS

Signature: ..... Date: .....

Attn AECOM / Neville Baker. 23-9-09

BAYSWATER B. Power Station

ABORIGINAL HERITAGE ASSESSMENT 2009.

ABORIGINAL STAKEHOLDER COMMENTS.

UPPER HUNTER HERITAGE AND CONSULTANTS, DARREL MATTHEWS

DRAFT REPORT AGREE, ABORIGINAL SIGNIFICANT

A LOT OF CULTURE IN THIS ERA"

OTHER COMMENTS DO RECOMMEND EXCAVATIONS

ALONG CREEK LINES PLUS ANY OTHER SURVEYS

YOURS DARREL MATTHEWS.

After AECom' Neville Baker. 23-9-09.

Bayswater B Power Station

Aboriginal Heritage Assessment 2009.

Aboriginal Stakeholder Comments

Hunter Valley Culture Consultants Christine Archbold

Draft Report, Agree.

Aboriginal Significant Rare Artifacts found on this site.

Known as Bayswater CRA.

Other Comments Same as the other Stake Holders.

to Do Excavations, Site Surveys along Creek Lines

Yours Christine Archbold

Fax Back Form : Fax to AECOM (Attn: Neville Baker) on 02 8484 8989

Bayswater B Power Station

Aboriginal Heritage Assessment 2009

Aboriginal Stakeholder Comments

I have read the draft report prepared by AECOM titled "Bayswater Liddell Power Generation Complex Environmental Assessment: Heritage" dated 8 September 2009.

I wish to make the following comments (*continue on new page if more space needed*):

1) The area is significant to Aboriginal people because:.....

.....

.....

.....

2) I have read the recommendations of the draft report and (tick box below)

☑ Agree

☐ Disagree because:.....

.....

3) I have read the significance assessment in the draft report and

☑ Agree

☐ Disagree because:.....

.....

4) Other comments: ..... NIL .....

.....

.....

.....

.....

(*use a new page if more space needed*)

Name: CLIFFORD MATTHEWS

Organisation: MINGGA CONSULTANTS

Signature: Clifford Matthews Date: 19-9-09

LOCAL ABORIGINAL LAND COUNCIL
WANARUAH

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ABN 33 251 730 169

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24 September 2009

Mr N Baker
Principle Archaeologist
ENSR/AECOM
PO Box 726
PYMBLE NSW 2073
(Sent by fax: 8484 8989)

Dear Neville

RE: REVIEW OF DRAFT BAYSWATER LIDDELL POWER GENERATION COMPLEX ENVIRONMENTAL ASSESSMENT; HERITAGE, BAYSWATER NSW

Thank you for the opportunity to review the above Draft Heritage report dated September 2009.

The Wanaruah LALC understands that the initial study for this report formed part of the preliminary Environmental Assessment for the determining authorities to assess the viability of the proposed Bayswater B Power Station. As such, only the Land Council was consulted in July 2009, due to the limited timeframe that ENSR/AECOM had to compile a report for consideration. Sarah Hall and Rick McGrady represented the Land Council during the initial site inspection. It was recommended at that time, that the other Aboriginal stakeholders were to be informed that this study was being undertaken and that a consultation meeting would need to be held as soon as possible. This was carried out on 9 September 2009 and included a site inspection as well as the meeting, at which Suzie Worth represented the Land Council and this draft report was distributed to all groups present for review and comment on the project and cultural heritage issues in general.

As a result of these site inspections and meeting, the Wanaruah LALC has concern that the impacts of the development and construction of the proposed Power Station as currently designed and positioned within the landscape will disturb, damage and destroy highly significant sites as indicated in this report.

It was stated that out of 47 Aboriginal artefact scatter sites reported, two had high cultural and potential scientific significance due to their content and nature (Sites 37-2-820 [stone tools + knapping floor + grinding stone] and MGA35 [stone tools + grinding stone]). Other sites were assessed as having moderate significance but have all sites have high cultural significance. No mention was made of the porcellanite knapping floor indicated during the site inspection in September 2009. It has been reported that porcellanite is found naturally in the Burning Mountain region to the north-east of Bayswater and is 'a component of the geology of the South Bickham area' (HLA, 2006[1]). It is quite likely that the material may have been brought or traded to the Bayswater site. Sites like this should be protected and conserved in situ for the cultural benefit and education of our present and future generations, as respect for our ancestors who lived and utilized the natural resources of the area prior to European desecration of the land.

RECOMMENDATIONS FROM THE REVIEW OF THE DRAFT REPORT

1. Saltwater Creek contains remnants of the natural vegetation and environmental aspects particularly to the south and south-east portion of MGA6 where an escarpment is exposed beyond the creek and a Wedge-tailed Eagles nest was observed. It is believed to be important that this aesthetic creek environment with its known cultural heritage material and features should remain intact.

2. It would be preferable for the design of the footprint of the 'proposed CCTG Plant Option', 'proposed USC Thermal Plant Option' and 'switchyard' (Figures 2, 5, 8 and 9) to be moved slightly to the north-west and 150m from Saltwater Creek and its tributaries and that an area within 100m of the creeklines be fenced off and managed as a 'Cultural Heritage Management Zone (CHMZ)'. All sites then impacted or potentially impacted by the plant construction, access roads, transmission lines, conveyors and pipelines would be salvaged and the artefacts placed within the CHMZ. This will probably necessitate the excavation into the 'level to very gentle simple slope' and 'gentle simple slope' (Figure 4) and test excavations could be carried out in this location prior to construction (as per Section 10.2.4), should this project go ahead.

3. If however, if it is not feasible to undertake the above design location changes, the Land Council agrees with the Heritage Management Commitments (Section 10.0).

4. Following the assessment of the project by the determining authorities, should the detailed design of the Power Station infrastructure change or their locations, the future Project Application must include a re-assessment of those changes in consultation with the Aboriginal community.

5. An Cultural Heritage Liaison Committee should be established made up of representatives of the Aboriginal community with the aims of assisting and advising the future proponent and their contractors with cultural heritage

[1] HLA-Envirosciences (2006) *Aboriginal Heritage Assessment – Proposed Open Cut Mine, South Bickham, Murrurundi, Hunter Valley NSW*. Report to PBB Pty Limited, Rhodes NSW

issues that may arise during the construction of the power station and its infrastructure.

Thank you for this opportunity to make comment on the project and please note that it is the Land Council's policy that all report review comments are provided under Wanaruah LALC letterhead.

We look forward to continuing the consultation process with you and Macquarie Generation (or whoever becomes the selected proponent should the project proceed) and should you wish to discuss our comments further, please do not hesitate to contact us on (02) 6543 1288.

Yours sincerely

Suzie Worth
Culture and Heritage Officer
Wanaruah Local Aboriginal Land Council

7 Cypress Place
MUSWELLBROOK NSW 2333
Phone: 0265 410761
Fax: 0265 410760

Yinarr Cultural Services

Fax

To:	Neville Baker	**From:**	Kathleen Steward-Kinchela
Fax:	8484 8989	**Date:**	November 10, 2009
Phone:	8484 8999	**Pages:**	4 (Including this Page)
Re:	REVIEW OF DRAFT BAYSWATER LIDDELL POWER GENERATION COMPLEX ENVIRONMENTAL ASSESSMENT: HERITAGE, BAYSWATER NSW.	**CC:**	

☐ **Urgent** ☐ **For Review** ☒ **Please Comment** ☑ **Please Reply** ☐ **Please Recycle**

Comments: Neville, Please find enclosed information in regards to the above project.

Neville would you be able to either phone or fax me in regards of confirmation that you have received our comments that I have sent to you.

Thank you Kathleen Steward-Kinchela (Yinarr Cultural Services).

Yinarr Cultural Services
Discover *Protect*

10th November 2009

Mr N Baker
Principle Archaeologist
ENSR AECOM
PO Box 726
PYMBLE NSW 2073
(Sent by fax: 8484 8989)

Dear Neville,

RE: REVIEW OF DRAFT BAYSWATER LIDDELL POWER GENERATION COMPLEX ENVIRONMENTAL ASSESSMENT: HERITAGE, BAYSWATER NSW

Thank you for the opportunity to review the above Draft Heritage Report dated September 2009. Yinarr Cultural Services apologises for not commenting earlier within yonr timeframe as our stakeholder has been very unwell.

Yinarr Cultural Services understands that the initial study for this report formed part of the preliminary Environmental Assessment for the determining authorities to access the viability of the proposed Bayswater B Power Station.

Aboriginal Stakeholders were informed of this study that was being undertaken and that a consultation meeting was held. A meeting was carried out on 9th September 2009 and included a site inspection as well as the meeting, at which Kathie Steward-Kinchela represented Yinarr Cultural Services and this Draft Report that was distributed to all groups present for review and comment on the project and Cultural Heritage issues in general.

As a result of these site inspections and meeting, Yinarr Cultural Services is concern that the impacts of the development and construction of the proposed Power Station as currently designed and positioned within the landscape will Disturb, Damage and Destroy highly significant sites as indicated in this report.

It was stated that out of 47 Aboriginal artefact scatter sites reported, two had high cultural and potential scientific significance due to their content and nature (Stone tools, knapping floor, and grinding stone). Other sites were assessed as having moderate significance but have all sites have high cultural significance.

No mention was made of the Porcellanite knapping floor indicated during the site inspection in September 2009. It has been reported that Porcellanite is found naturally in the Burning Mountain region to the North – East of Bayswater and is 'a component of the geology of the South Bickham area'.

It is quite likely that the material may have been brought or traded to the Bayswater site. Sites like this should be protected and conserved in situ for the cultural benefit and education of our present and future generations, as respect for our ancestors who lived and utilized the natural resources of the area prior to European desecration of the land.

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3. If however, if it is not feasible to undertake the above design location changes, Yinarr Cultural Services agrees with the Heritage Management Commitments.

4. Following the assessment of the project by the determining authorities, should the detailed design of the Power Station infrastructure change or their locations, the future Project Application must include a re-assessment of those changes in consultation with the Aboriginal community.

5. A Cultural Heritage Liaison Committee should be established made up of representatives of the Aboriginal community with the aims of assisting and advising the future proponent and their contractors with Cultural Heritage issues that may arise during the construction of the Power Station and its infrastructure.

Thank you for this opportunity to make comment on this project. We look forward to continuing the consultation process with you and Macquarie Generation (or whoever b becomes the selected proponent should the project proceed) and should you wish to discuss our comments further, please do not hesitate to contact us on 0432 720 623.

Yours sincerely

Kathleen Steward-Kinchela
Stakeholder
Yinarr Cultural Services

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