Mt Piper Power Station Extension

Submissions Report

November 2009

Mt Piper Power Station Extension Environmental Assessment

SUBMISSIONS REPORT

- November 2009

Sinclair Knight Merz
ABN 37 001 024 095
100 Christie Street
PO Box 164
St Leonards NSW
Australia 1590
Tel: +61 2 9928 2100
Fax: +61 2 9928 2500
Web: www.skmconsulting.com

Contents

Document history and status

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
2	27.11.09	KIMR	KIMR		Final

Distribution of copies

Revision	Copy no	Quantity	Issued to
2	Electronic		

Printed:	27 November 2009
Last saved:	26 November 2009 12:55 PM
File name:	
Author:	S Stephinson, M Davies, S Lakmaker, S Hughes, N Hayes, A McLennan, K Robinson
Project manager:	K Robinson
Name of organisation:	Delta Electricity
Name of project:	Mt Piper Extension EA
Name of document:	Environmental Assessment – Submissions Report
Document version:	Final
Project number:	EN01942

1. Introduction

1.1 Overview

This report has been prepared to support Delta Electricity's application for the concept plan approval for the proposed Mt Piper Power Station Extension project, under Part 3A of the *Environmental Planning and Assessment (EP&A) Act 1979*. It addresses the responses to the public exhibition of the Environmental Assessment.

The proposed Power station extension comprises the construction and operation of a new base-load power station and associated infrastructure with a maximum generating capacity of 2,000 megawatts (MW), fuelled either by coal, using ultra-supercritical (USC) generating technology or natural gas, using combined cycle gas turbine (CCGT) generating technology. Both options would use air cooled condensers (ACC) to minimise water usage. The new power station would be located to the west of the existing plant, generally in the area previously prepared for Units 3 and 4 when Units 1 and 2 were constructed.

The area of the proposed extension project is shown in Figure 1-1.

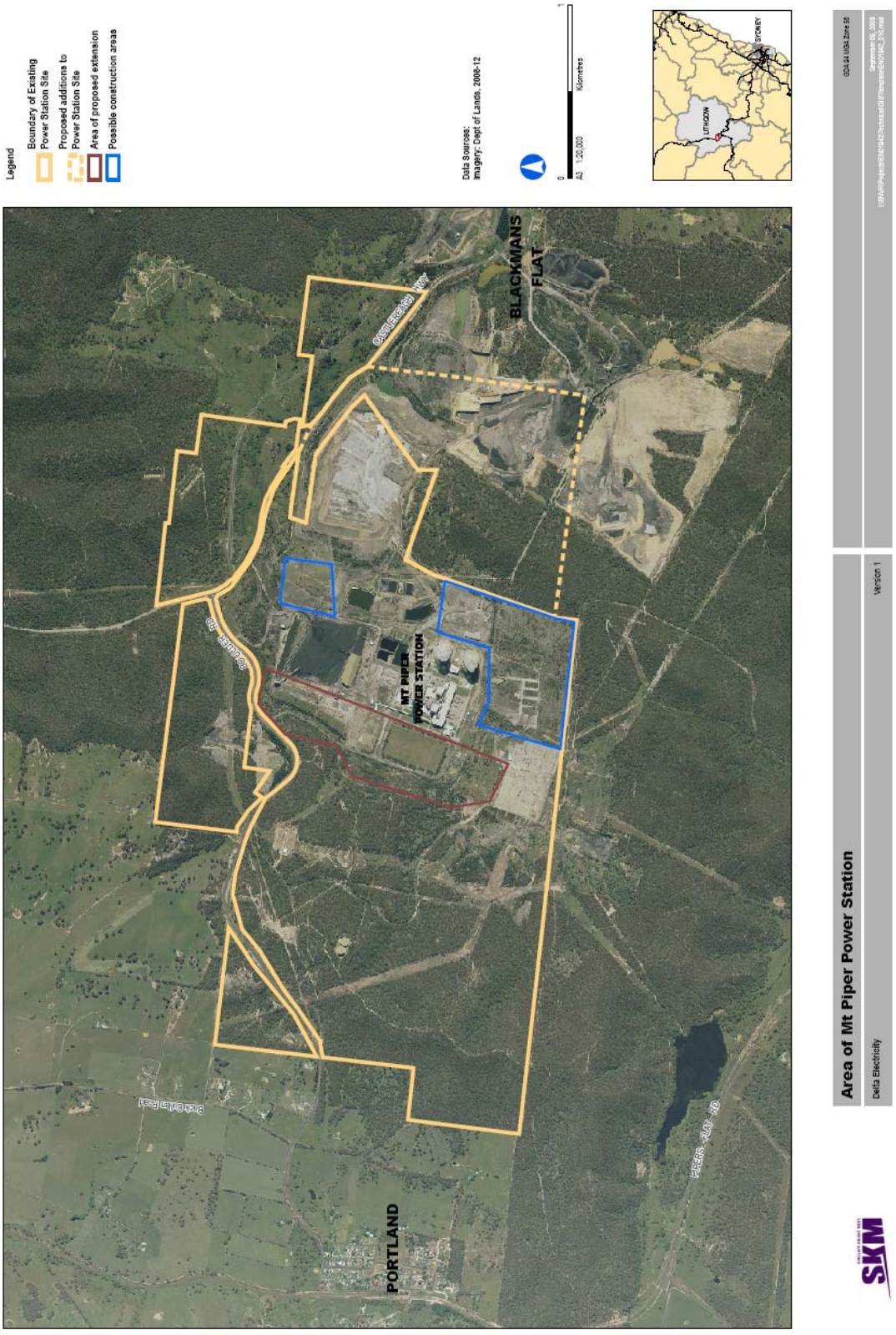
1.2 Submissions to the Environmental Assessment

The Environmental Assessment for the Mt Piper Power Station Extension project was placed on public exhibition by the Department of Planning from 25 September to 26 October 2009. A total of 383 submissions were received by the Department, of which 12 were duplicates and one was triplicate, resulting in 369 individual submissions – 357 from the community and 12 from government (agencies, members of parliament and councils). The submissions comprised:

- Submissions from NSW Government agencies, namely the Department of Environment, Climate Change and Water, Roads and Traffic Authority, Sydney Catchment Authority, NSW Health, Department of Industry and Investment, Department of Defence and the NSW Office of Water;
- A submission from Lithgow City Council;
- A submission from John Kaye, MLC;
- Submissions from Marrickville Council, City of Sydney Council and Mid-Western Regional Council;
- Submissions from the general community (individuals and groups).

Government submissions are summarised in Chapter 2 and responses provided.

Community responses were put into a data base and sorted according to topics or issues of concern that were raised in the submissions. The data base is provided in Appendix A. The issues are summarised in Chapter 3 and responses to the issues provided.



- **Figure 1-1 Mt Piper Site Layout**

2. Government Submissions

Various NSW Government agencies, Councils and John Kaye MLC on behalf of NSW Greens provided responses to the exhibition of the Environmental Assessment. The submissions are summarised and addressed in this chapter.

2.1 Department of Environment, Climate Change and Water

2.1.1 Submission

The NSW Department of Environment, Climate Change and Water (DECCW) required that certain issues be addressed as part of the submissions report. To provide maximum certainty for all parties, DECCW have requested that, where practicable, the issues be addressed in this response to submissions rather than deferring these matters to the project approval application.

Submission summary

General support

DECCW has reviewed the Information provided and determined that it does not object to the proposal as described in the EA, subject to:

- The proponent addressing issues raised including: project context, air, greenhouse gas emissions, noise, water, aboriginal cultural heritage, threatened species and waste, and
- The inclusion of recommended conditions of approval in the Concept Approval.

Air Quality

Assessment data

DECCW agrees with the conclusion of the EA that the USC (coal fired) option has a higher potential to cause adverse air quality impacts than the CCGT (gas fired) option.

- Emission limits

On balance, DECCW considers the EA provides sufficient information to demonstrate that the proposal could be developed so that compliance with current air quality assessment criteria is achieved. However, DECCW seeks clarification and additional information on several matters, including information required to set emission limits for the proposal.

- Meteorological data

The assessment does not rigorously demonstrate that the meteorology selected for modelling represents all meteorological variations that are likely to occur at the site. Additionally, the assessment does not demonstrate that the spatial variability of the meteorological conditions in the study domain have been accounted for. The proponent should demonstrate that the meteorology chosen for use in the

assessment is not likely to result in significantly lower pollution concentration predictions than would have occurred if a different year(s) had been assessed.

- Calpuff model

Table 5 of the assessment (Appendix E of the EA) states that the surface data input into CALMET used temperature, relative humidity and pressure data from TAPM. However, temperature, relative humidly and pressure are all measured at Mt Piper. The proponent should provide an explanation as to why synthetic surface meteorological data were input into CALMET.

- Ambient air quality data

Appendix E states that the concentrations measured at Blackmans Flat and Wallerawang, whilst being the highest of all available data, would not likely represent the peak background concentrations in the assessment region. It also tabulates a summary of ambient air quality data for the year 2001. Peak ambient concentrations are presented for total nitrogen oxides (NO_x), nitrogen dioxide ($N0_2$) and Sulphur dioxide ($S0_2$). In all cases, the monitored data presented were below current DECCW ground level concentration criteria. No detailed long term data are presented. The proponent should provide a longer term ambient air quality analysis to demonstrate that 2001 was an appropriate year for simulation,

- Emissions data assessed

The assessment only considers the use of coal or gas as fuel. The assessment does not provide any discussion on the properties of fuel oil to be used to ignite coal fired boilers. Additionally, the assessment does not provide an estimate of the quantity of fuel oil that will be used by the proposed facility on an annual basis. Future assessment for the proposal should assess likely impacts from all fuel types proposed for combustion at the site.

Section 7,1 of the assessment erroneously states that the Protection of the Environment Operation (Clean Air) Regulation, 2002 (POEO Regulation) specifies the NO_x, Group 6 limit of gas turbines is 51mg/m^3. It is 70mg/m^3. However, proper and efficient operation of a modern dry low NO_x, burner fuelled by natural gas has been shown to achieve NO_x, emissions equal to or lower than 51mg/m^3.

In most cases, the assessment modelled actual (existing .and proposed) emissions rather than POEO Regulation limits. The existing Mt Piper power station emits NO_x, at a greater concentration than the POEO Regulation limit for Group 6 plant, namely 500 mg/m^3. As such, the assessment modelled NO_x, emissions at the regulation limit for the proposed coal fired option.

For the gas fired (CCGT) the assessment provides no explanation of time source of emissions data for the gas fired option, however, the modelled emission concentration was below the POEO Regulation limit. DECCW cannot recommend limits higher than those modelled, as potential impacts have not been quantified. Accordingly DECCW has recommended a limit of 51 mg/m^3 for the gas fired option.

No explanation has been give for the assumption in the assessment that the coal fired option will be 7% more efficient than the existing 660 MW Mt Piper power station. The proponent should provide details of how the assumed increase in plant efficiency was calculated.

The assessment advises that the existing Mt Piper power station has been upgraded to operate at a fuel load capacity of 700 MW. However, based on the information contained in the assessment, dispersion modelling scenarios were based on the plant when it operated at 660 MW at full load. Analysis of in-stack emission concentrations showed that the upgrade to 700 MW plant increased pollutant concentrations by between 4 and 7%. On this basis, the dispersion model could be under predicting ground level concentrations by a similar amount. The proponent should update the assessment to include the existing Mt Piper power station operating at full load (700 MW).

- Emission limits for the coal fired (USC) option

Based on the requirements of the *Approved Methods,* existing power station Annual Return data and recommendations from the *EU BREF 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/m^3 for solid particles is recommended for the proposal.

DECCW requires that the proponent 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.*

- Proposed emission controls

The assessment discusses technologies available to reduce omission concentrations from tho proposal. The proposal does not intend to incorporate all the technologies discussed. For the gas fuelled option, dry low NO_x, burners will be used. For the coal fired option, low NO_x, combustors and fabric filters for particulate emissions will be used. No specific $S0_2$ controls are proposed.

Air quality - assessment methods and results

DECCW notes the air quality impact assessment predicts exceedances of DECCW ground level concentration criteria for NO_2, and $S0_2$.

- $N0_2$ exceedances are predicted

The use of a blanket 30% NO_x to $N0_2$ conversion ratio is not consistent with the requirements of the DECCW's *Approved Methods.* Accordingly, the proponent should conduct a revised $N0_2$ assessment using a transformation method that is specified in the *Approved Methods.*

- Cumulative scenarios

The assessment does not provide cumulative isopleth plots for the modal scenarios that include Mt Piper, Wallerawang and the proposal emissions. Future assessment for the proposal should include isopleth plots for all cumulative scenarios assessed.

- SO_2 exceedances are predicted

It is likely that the geographical extent of the exceedance hours would Increase for the coal fired option. However, the assessment does not provide cumulative isopleth plots for the model scenarios that include Mt Piper, Wallerawang and the proposal emissions. Future assessment of the proposal should include isopleth plots for all cumulative scenarios assessed.

There is minimal change in exceedance hours predicted for the cumulative scenarios assessed. However, incremental impacts predicted for the coal fired option will exceed ground level concentration criteria. Specifically, the 10-minute averaging period predicts three exceedance hours per year and the l-hour averaging period predicts two exceedance hours per year. The assessment shows that $S0_2$ is the pollutant of greatest concern for the proposal.

- Potential impacts on vegetation

The EA does not discuss or identify any Hydrogen Fluoride (HF) sensitive land uses. It is unknown whether there are no sensitive land uses in the study domain or if the assessment simply neglected to assess this aspect of HF. The sensitive land use criteria are lower than the general HF criteria. The proponent should advise whether there is any sensitive land use(s) located In the vicinity of the proposal. If sensitive land uses are identified, the project should consider sensitive land use criteria for HF. The assessment does not appear to assess HF as a 90-day average for general land uses. The proponent should provide a 9O-day averaged assessment of HF.

- Model performance assessment

DECCW agrees that the model appears to over-predict the highest 1-hour $S0_2$ concentration at Wallerawang. However, the model under-predicted impacts at Blackmans Flat by about 30%.

The assessment states that the modelled second and third highest concentrations show better agreement with measured maximums at some locations. The second highest model prediction is closer to the maximum measured-hour $S0_2$ concentration at Wallerawang, based on Figure 10 of Appendix E. However, the second highest model prediction would under-predict the maximum measured concentration by ~ 50 $\mu g/m^3$. Additionally, based on the results for Blackmans Flat, the use of the second highest model prediction would not be appropriate for use at all locations across the model domain.

Tho assessment references model validation from other studies, particularly Holmes (2005), to help demonstrate Calpuff's propensity to over-predict peak short term ground level concentrations(s).

However, Holmes (2005) predicted maximum 1-hour and 24-hour SO_2, impacts that were lower than the observed maximum SO_2, concentrations at Blackmans Flat and Wallerawang monitoring stations.

The air quality impact assessment and Holmes (2005) both modelled Mt Piper for the year 2001. Based on the differences in model performance at the same site using the same emissions data, the proponent should compare the differences in model configuration to help refine the assessment.

- Model configuration files

Tho EA should supply model configuration files in a Microsoft office compatible format, as per the requirements of section 9 of DECCW's *Approved Methods.*

Dust

DECCW notes the potential for dust generation during construction and operation particularly coal handling, storage and ash disposal activities and has included a standard recommended condition of approval. Future assessment should include fugitive particle emissions from the proposal and measures to be implemented to prevent or minimise the generation and emission of dust from the site.

Greenhouse gas emissions

Either fuel option will represent an additional significant source of greenhouse gas emissions in NSW. Annual greenhouse gas emissions From a ultra-supercritical coal fired plant will be in excess of 10.5 million tonnes of carbon dioxide equivalent (Mt CO_2-e) while for a combined cycle gas turbine (gas fired) plant annual emissions will exceed 4.9 Mt CO_2-e. This represents more than 6 percent and 3 percent of total NSW annual emissions respectively.

The emissions intensity of both the gas fired option and the coal fired option represent improvements compared with the current average emissions intensity of base load electricity supply in NSW.

The design should ensure that sufficient space for post-combustion carbon capture plant is allocated and that sufficient access to plant systems is provided.

It is anticipated that the requirement for continual evaluation of measures to reduce *and/or* offset greenhouse gas emissions would be re-evaluated at regular intervals. If the proposed federal Carbon Pollution Reduction Scheme (CPRS) proceeds, then the effectiveness of the Scheme at reducing emissions would be considered at these review intervals.

Given that the fixed and variable operating costs for new entrants of gas-fired plant are less than coal fired plant (see ACIL Tasman 2009, Fuel resource, new entry and generation costs in the NEM, http:/www.aemocom.au/planning/419-035.pdf) this would warrant a more detailed assessment of the comparative costs of the CPRS for gas-fired, coal-fired and coal fired with post-combustion carbon capture plants.

Noise

Identification of sensitive noise receivers and existing noise environment

The noise Impact assessment (NIA) does not include a comprehensive identification or listing of noise sensitive receivers around the Mt Piper power station extension footprint. While DECCW is able to determine that the ambient noise monitoring locations are generally indicative of the nearest residences, using desktop review means only (i.e. 'Google maps'), some isolated residences may be closer. One such example identifies an apparent residence to the north east of location C off Wallerawang Portland Cullen Bullen Road, bordering on Ben Bullen State Forest.

DECCW suggest applying specific noise limits at the locations identified as A-D, and having a general limit at "any other residential premises", or "any ether residential premises existing at the time of project approval". The proponent would need to assess the compliance risk implications of such an approach before accepting the limits.

Project specific noise levels

As the power station will operate continuously, the night time criterion is the limiting factor. The NIA has derived night time intrusive noise limits ranging between LAeq15mins 35·36dB(A). An intrusive limit of 35dB(A) is the Industrial Noise Policy most stringent criteria. On that basis DECCW has not committed significant resources in reviewing the data used, or the criteria developed for the power station and accepts the NIA result.

Potential noise enhancing meteorological conditions

The meteorological assessment presented is quite limited as it only considers one year of data, being 2001. Additionally, the assessment of significant wind vectors (does not appear to satisfy the Industrial Noise Policy as it has not been broken down into seasons and assessment periods (day, evening and night), Also, it has not considered cardinal directions for wind *+/-· 45°*. However, the approach in the Director General Requirements (DGRs), and as adopted in the NIA, of considering the Industrial Noise Policy default conditions for prediction purposes has largely negated the need for a comprehensive analysis of potential noise enhancing meteorological conditions.

Noise modelling scenarios

The predicted noise levels, using Industrial Noise Policy default parameters, exceed the project specific noise levels (PSNL) by up to 4dB(A) for the coal fired option and up to 5dB(A) for the CCGT option. DECCW is of the opinion that the information contained in the NIA is insufficient to agree to, or recommend, noise limits that exceed the PSNLs due to the following:

(i) It is not clear whether the predicted noise levels listed in Appendix D, (Tables 5.1 and 6.1) include noise from the Western Rail Coal Unloader (WRCU). The NIA should include project related noise predictions. While DECCW accepts that the DGRs required a cumulative assessment of noise from

nearby power stations (Wallerawang) and the WRCU, the cumulative assessment should be undertaken in one of the following two ways:

- the amenity criteria should be derived considering existing and approved sources of industrial noise: where the amenity criteria is the PSNL, project related noise levels should be assessed against it; or
- cumulative noise from all industrial sources, including the project, can be assessed against the acceptable noise levels in Table 2.1 in the Industrial Noise Policy.

(ii) The NIA, while presenting noise levels above the PSNL, acknowledges that the predictions are largely based on pre-detailed design information and lower noise levels may be achievable. DECCW's standard practice is to only consider licensing to noise limits that exceed the Industrial Noise Policy PSNL after it has been determined that the presented levels are the lowest that can be feasibly and reasonably achieved.

(iii) While the EA indicates that the Mt Piper power station may ultimately be run by two separate entities, the noise modelling has dealt with the existing and proposed power stations as one entity. In this regard, DECCW notes there is insufficient information in the EA to apportion 'noise allocations' to each potential entity and that there would be many common plant, for example the ash extraction plant, supply coal area etc. DECCW also notes that the community would see the plant as a single entity. For these reasons, it is recommended that noise limits apply to the whole power station (being the existing power station and the proposed extension). Should the proponent wish to operate the power stations as separate entities the noise contribution from the proposed Mt Piper power station extension would need to be determined.

Water

DECCW has provided standard recommended conditions of approval that relate to water pollution.

Aboriginal cultural heritage

DECCW has reviewed the Aboriginal Cultural Heritage Assessment provided in the EA and notes that it has not addressed the issues of concern raised by DECCW during the adequacy assessment of the draft EA in September 2009. These issues should be addressed by the proponent as part of the Submissions process.

Community consultation

The proponent has not satisfied the consultation requirements outlined in the DEC document *'Interim Community Consultation Requirements for Applicants'* dated December 2004 ('the guidelines'). It is acknowledged that the proponent did consult with Aboriginal stakeholders and interested groups, however, the methods and timeframes for consultation were not consistent with the guidelines. DECCW is also concerned about the proponent's interpretation of the guidelines. In Appendix C (p3)

it is stated that the proponent shall decide which of the registered stakeholders who submit an expression of interest should be involved in the project, and how they should be involved. This interpretation is incorrect. The proponent shall involve all of the registered stakeholders in the project and allow all to have input into the project methodology and allow for review of draft and final replies by all registered stakeholders.

Aboriginal participation in survey

DECCW notes Appendix C states that Aboriginal stakeholders did not participate in the field inspection duo to the highly disturbed nature of the site. However, DECCW understands that the Aboriginal Community were told they were not allowed to participate in the field visit due to safety and access issues despite the site being accessible to the archaeologist who undertook the field Inspection. The proponent should provide an opportunity for all Registered Aboriginal stakeholders to inspect the site.

Mapping

Figure 1 within .the main body of the EA (Chapter 7 Volume 1 • Main Report), indicates the locations of registered Aboriginal sites in the study area. The locations mapped are not accurate and, in some cases, are mapped 10km from the actual recorded location in DECCW Aboriginal Heritage Information Management System. The proponent should correct this map to ensure all sites are plotted at their actual location.

Survey coverage

It is not clear if all landform units within the study area were surveyed. This should be clarified by the proponent.

Threatened species

DECCW has reviewed the Ecological Assessment provided in the EA and believes the proposed avoidance and mitigation measures are appropriate. As such, DECCW has not provided any recommended conditions of approval that relate to threatened species management at the site. DECCW can provide further advice and recommend conditions of approval, should the proposed footprint expand beyond the current boundaries identified in the EA.

Waste

Ash

DECCW notes that the current application does not make provision for the handling, storage and disposal of ash for the coal fired (USC) option. Instead arrangements for future ash storage are to be the subject of a separate planning application. The generation and disposal of ash has the potential for

significant impacts on flora and fauna, water quality, and Aboriginal cultural heritage values. Accordingly, resolution of how ash is to be managed is critical, should the coal fired option proceed.

In this regard, DECCW would expect its environmental assessment requirements, as detailed in its advice to the Department of Planning's Director General dated 29 June 2009, to be addressed as part of any separate planning application. These matters should be addressed prior to the determination of any project application for the coal fired option.

DECCW notes that tile gas fired option (CCGT) has the benefit of not generating ash.

Other waste

The construction and operational waste streams (aside from ash disposal) identified the EA and the proposed reuse, recycling and disposal options are appropriate. Accordingly DECCW has provided recommended conditions of approval relating to ash disposal and standard waste management requirements.

2.1.2 Response

Air Quality

Meteorological Data

Dispersion modelling using meteorology from the 2004 calendar year has been undertaken to assess any differences in model results, compared to the EA. The 2004 calendar year was chosen because this year had the best data recovery (after 2001) and the wind patterns were similar to other years.

Table 2-1 shows the results for SO_2 using 2004 meteorology and for 1-hour, 24-hour and annual average ground-level concentrations. The 1-hour averages are of most interest since no other averaging time was identified for potential exceedances of ground-level concentration criteria.

The results in Table 2-1 demonstrate that the assessment using the 2001 meteorological data does not result in significantly lower predictions than for an alternative year.

Table 2-1 Comparison of model results for different meteorological data

Averaging time	Highest ground-level SO_2 concentration in model domain due to the proposed Mt Piper B (USC) emissions (µg/m^3)	
	2001 meteorological data (EA)	2004 meteorological data
Maximum 1-hour average	1,393	1,045
Maximum 24-hour average	82	155
Annual average	2.2	2.2

Calpuff Modelling

Meteorological data from the Mt Piper site included hourly records from 2001 to 2005, however, temperature, humidity and pressure data were only available from 2002 onwards. The absence of temperature, humidity and pressure data in the 2001 records did not provide sufficient grounds for discarding this year, since there were complete and reliable records of wind speed and wind direction which are the most important parameters for dispersion modelling. The prognostic model TAPM has been demonstrated to predict parameters such as temperature, humidity and pressure more reliably than wind speed and wind direction (see for example, Hurley *et al*, 2009)[1].

It should also be noted that the measured barometric pressure data for the 2002 to 2005 years did not exceed 700 hPa, which is unrealistic for the Project location.

Ambient Air Quality Data

Section 5.4 of the air quality assessment provides a discussion on the existing air quality for the region. Summaries of long term records are provided in Tables 9 and 10. Analysis of the monitoring data was undertaken which indicated that the emissions from power stations were detectable in the 2001 records, which makes the data appropriate for use in the model performance investigation (see Section 9.2 of the air quality assessment). It should be noted that the selection of the simulation year is driven largely by the availability of reliable meteorological data. Hourly varying emissions and air quality data are useful to facilitate a model performance assessment and the 2001 calendar year satisfied these three criteria.

Emissions Data Assessed

With respect to fuel oil, the existing Mt Piper 1 and 2 coal units use fuel oil during start-up operations as will the proposed USC coal-fired units. As noted by the DECCW there is no assessment of emissions from fuel oil from Mt Piper coal operations and the reason for this is the short periods of time and minimal use of fuel oil and due to the fact that emissions of key pollutants eg. NO_X, SO_2 and particulates will be less for fuel oil operations compared to coal.

Discussion of emissions using fuel oil is provided below:

NO_X: emissions of NO_X result from combustion of nitrogen in the fuel and in the combustion air. The fuel oil specification provided by Delta indicates that there is no nitrogen in the fuel oil, whereas the

[1] Hurley P, Edwards M, Luhar A, Thatcher M (2009) *Evaluating the Meteorological Performance on TAPM.* Proceedings of the 19th International Clean Air and Environment Conference.

typical coal analysis shows nitrogen content up to 2 %. So as relevant to fuel, NO_X emissions from coal will be higher than oil. In terms of NO_x created from nitrogen in the combustion air, this is typically a function of the temperature of the flame which in turn is a function of the amount of fuel being burnt at the time and boiler load. A review of CEMS data for Mt Piper 1 and 2 does not show any higher emissions of NO_X at low loads for example during start-up when fuel oil is being used compared with emissions at higher loads when operating on coal as assessed. As such it can be reasonably concluded that NO_X emissions from fuel operation are not significant and likely to be lower than coal fired NO_X emissions.

SO_2: emissions of SO_2 are a function of the sulphur in fuel. The fuel oil specification places a limit on the sulphur content of 0.5 % whereas coal sulphur content is greater than 0.5 %. Even allowing for the small fraction of sulphur retained in ash, the SO_2 emissions from fuel burnt will be higher for coal than fuel oil. As such, assessing SO_2 impacts for coal firing will present a worst-case when compared to oil firing during start-up.

Particulates: emissions of particulates (as assessed) will be higher when coal firing due to higher flyash emissions than those associated with oil firing.

Section 7.1 of the air quality assessment incorrectly stated that the Group 6 limit for gas turbines was 51 mg/Nm^3. As noted by the DECCW, the correct limit from the *Clear Air Plant Equipment Regulation 2002* is 70 mg/Nm^3. The proposal by DECCW to set a NO_X limit of 51 mg/Nm^3 for the CCGT plant option is considered acceptable on the basis that dry low NO_X (DLN) technology will enable an emission concentration of this order to be achieved and it is consistent with recent gas turbine approvals in NSW.

The DECCW provided comments regarding the potential underestimation of emissions from the existing Mt Piper Power Station on the basis of it being modelled as 2 x 660 MW units. It was noted in the air quality assessment that each unit has the potential to operate up to 700 MW. SKM has now reviewed recent (2009) stack testing data to assess the variability of emissions at different plant loads. The results are presented in Table 2-2**.**

- **Table 2-2: Comparison of Modelled Emissions with Actual Emissions**

Duct	Date	Load (MW)	Flow (Nm^3/s)	NO_x conc (g/Nm^3)	NO_x Mass (g/s)	SO_2 conc (g/Nm^3)	SO_2 mass (g/s)
MP1b	7/07/2009	700	340	0.85	290	1.2	410
	17/06/2009	660	330	0.74	250	1.3	440
	24/03/2009	660	350	1.2	410	1.1	390
MP2a	8/07/2009	660	340	0.72	210	1.2	330
	26/05/2009	660	360	0.74	220	1.1	340
	24/03/2009	660	350	0.83	250	1.2	360
4 duct data			1380	0.85	1087	1.18	1513
Modelled Emissions		660	1469	0.97	1422	1.06	1550

It can be seen from Table 2-2 that there is one set of stack test data for one unit operating at 700 MW. Of particular note is that, in terms of both SO_2 and NO_X, there are mass emission rates for operations at 660 MW which are greater than those at 700 MW. Additionally, it can seen that the mass emissions used for modelling are higher for both SO_2 and NO_X than the average of 2009 stack test data which includes operations on one unit at 700 MW for one sample. For other important parameters affecting air quality, eg stack velocity and temperature, there is no appreciable difference between 700 MW and 660 MW, as modelled.

As such it can be seen that modelling emissions for the existing Mt Piper Power Station based on a 2x660 MW configuration will not underestimate SO_2 and NO_X impacts when compared to operations at 2x700 MW. In terms of other pollutants, eg particulates, these are governed by the bag filter pollution control devices, which will provide the same level of control at both 2 x 660 MW and 2 x 700 MW operation.

Emission Limits for USC

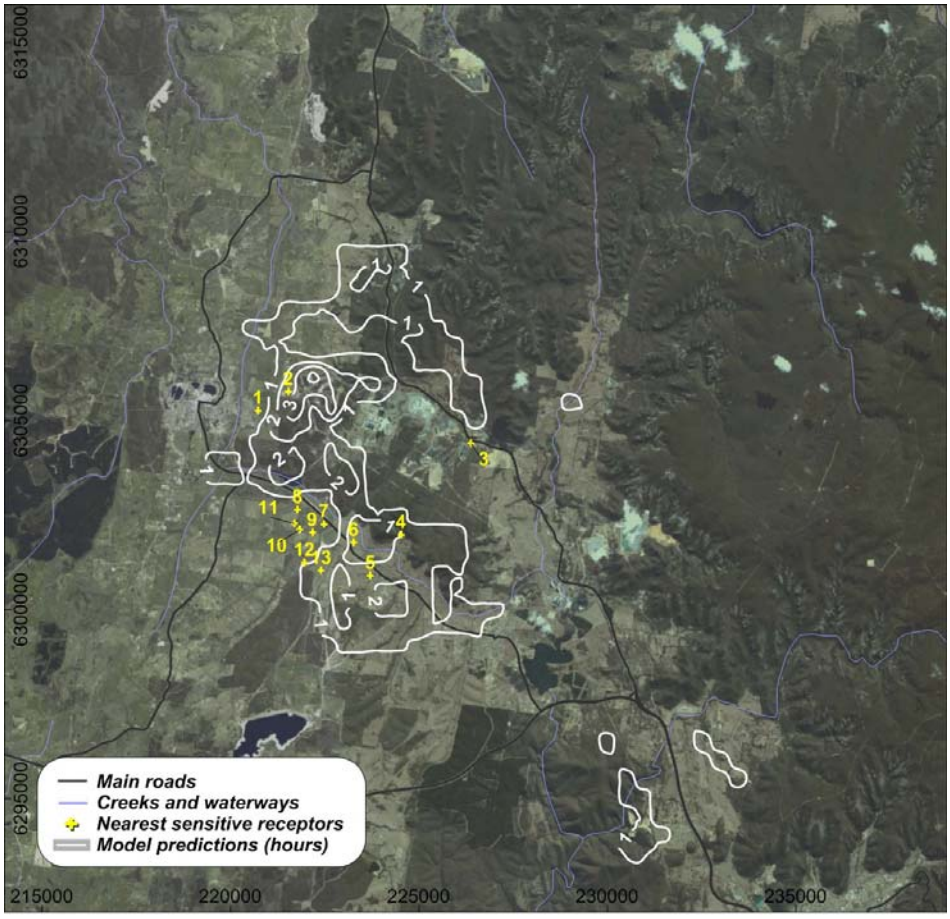
As requested by DECCW, SKM has undertaken further assessment of emission concentrations, based on the results of the dispersion modelling presented in the air quality assessment. Essentially, DECCW has asked for an analysis of potential emission limits with respect to SO_2 and other pollutants.

It is our understanding that emission limits, other than those listed under Group 6 of the Clean Air Plant and Equipment Regulations (CAPER), are not required for the project. However, to comply with the DECCW request, the following presents an analysis of maximum emissions concentrations

from Mt Piper Extension coal fired units that would provide for compliance with ambient air quality criteria.

With respect to SO_2 Figure 2-1 shows the potential for additional exceedances of air quality criteria (1 hour SO_2 = 570 µg/m^3) from Mt Piper Extension USC 4 units. Also shown are nearest residential receptor locations.

Figure 2-1 Predicted change in the number of hours above 570 µg/m^3 (SO_2)



Mt Piper A plus Wallerawang plus Mt Piper B (USC)

It can be seen that based on the modelled SO_2 emission concentration (1055 mg/Nm^3) for Mt Piper 3 and 4, there may be up to 2 additional exceedances of air quality criteria in areas occupied by sensitive receivers.

Table 2-3 shows the calculations of maximum in-stack SO_2 concentrations for the proposed USC plant stack, based on results from the dispersion modelling. These concentrations have been determined as

the maximum in-stack levels at which dispersion modelling will show compliance with ambient air quality criteria, that is, no additional exceedance hours at the most affected residential location.

- **Table 2-3 Calculation of suitable in-stack SO_2 concentrations for proposed USC plant stack**

Pollutant and averaging time	Modelled in-stack concentration (mg/Nm^3)	Predicted contribution* at the most affected residential receptor location (from Figure 1) ($\mu g/m^3$)	Ambient air quality criteria ($\mu g/m^3$)	In-stack concentration required to demonstrate compliance with ambient air quality criteria (mg/Nm^3)
10-minute average SO_2	1055	952	712	789
1-hour average SO_2	1055	666	570	903

** the predicted change in maximum levels due to Mt Piper Extension (USC). That is, predictions for all existing and proposed sources minus all existing sources.*

The data suggest that an in-stack concentration limit around 900 mg/Nm^3 will achieve this outcome for the 1-hour SO_2 criteria and 789 mg/Nm^3 will achieve this outcome for the 10-minute SO_2 criteria. The 10 minute predictions are considered less reliable than the 1-hour predictions as they rely on the use of an empirical power law formula (k=1.43) to convert 1-hour concentrations to 10 minute concentrations. In reality the actual relationship will depend on a range on factors including the stack and receiver heights, distance from stack to receivers and meteorological conditions.

The SO_2 emission concentration will be a function of the sulphur content of the coal, and as can be seen in Table 2-2, average SO_2 concentrations in 2009 (1180 mg/Nm^3) are consistently higher than the 900 mg/Nm^3 estimated from modelling as the level needed to ensure no additional exceedances of SO_2 ambient air quality criteria within sensitive receiver areas. If an SO_2 limit of 900 mg/Nm^3 was placed on the proposed Mt Piper Extension USC plant, this would restrict the coal able to be used in the plant to lower sulphur coal than is currently used, assuming no other pollution controls are available eg. FGD.

Given the small number of additional exceedances (less than 2), the limited number of potentially affected receivers and the fact that the analysis is based on theoretical modelling, imposing SO_2 emissions limits (i.e. restricting the coal supply on the basis of sulphur content) is not considered a realistic or practical approach to managing potential future air quality (SO_2) impacts. A more robust approach may be via a management plan designed to assess the actual impact of the power station, once operational.

With respect to other pollutants, Table 2-4 shows the calculations of maximum in-stack concentrations for the proposed USC plant stack, based on results from the dispersion modelling. These concentrations have been determined as the maximum in-stack levels at which dispersion modelling will show compliance with ambient air quality criteria.

- **Table 2-4 Calculation of suitable in-stack pollutant concentrations for proposed USC plant stack**

Pollutant	Modelled in-stack concentration (mg/Nm^3)	Predicted contribution at the most affected ground-level location ($\mu g/m^3$)	Ambient air quality criteria ($\mu g/m^3$)	In-stack concentration required to demonstrate compliance with ambient air quality criteria (mg/Nm^3)
Fluoride (as HF)	6.81E+00	5.3E-01	1.5	19.20
Antimony	1.23E-04	2.2E-05	9	49.89
Arsenic	4.97E-04	8.8E-05	0.09	0.51
Berylium	1.63E-04	3.0E-05	0.004	0.02
Cadmium	3.20E-04	5.9E-05	0.018	0.10
Chromium III	1.20E-03	2.2E-04	9	48.78
Chromium VI	6.13E-05	1.1E-05	0.09	0.48
Lead	1.53E-03	3.2E-06	0.5	241.04
Mercury	5.91E-03	1.1E-03	1.8	10.02
Nickel	4.70E-03	8.7E-04	1.8	9.77
Dioxins	8.78E-01	1.6E-07	0.000002	11.03
PAHs	8.98E-04	1.7E-04	0.4	2.14

It can be seen that actual emission concentrations for these pollutants as emitted from Mt Piper Extension USC plant can be much higher than existing concentrations as measured from Mt Piper 1 and 2 power station, before any breach of air quality criteria may be expected. Again, it is not recommended that emission limits other than those required under Group 6 of the Clean Air Plant and Equipment Regulations (CAPER) be imposed on the development, and this assessment clearly demonstrates a very low risk of environmental harm from the emission of these pollutants.

NO_2 exceedances

The air quality assessment adopted 30% as the proportion of NO_2 present in the NO_x at the point of maximum impact from the power station plumes. This proportion was based on results from the air quality monitoring data. The approach to estimating NO_2 impacts has been refined following the request in the DECCW submission.

The ozone limiting method (OLM) has subsequently been applied, as per Section 8.1.2 of the *Approved Methods*. The OLM assumes that all the available ozone in the atmosphere will react with NO in the plume until either all of the O_3 or all of the NO is consumed. Equation 1 shows the calculation.

Equation 1:

$$[NO_2]_{total} = \{0.1 \times [NO_x]_{pred}\} + MIN\{0.9 \times [NO_x]_{pred}, 46/48 \times [O_3]_{bkgd}\} + [NO_2]_{bkgd}$$

Where,

$[NO_2]_{total}$ is the predicted cumulative concentration of NO_2 in µg/m^3.

$[NO_x]_{pred}$ is the dispersion model prediction of ground-level NO_x in µg/m^3.

$[O_3]_{bkgd}$ is the background ambient ozone concentration in µg/m^3.

$[NO_2]_{bkgd}$ is the background ambient NO_2 in µg/m^3.

From the air quality assessment, **Equation 1** can be populated as follows:

$[NO_x]_{pred}$ = 660 µg/m^3 (maximum ground-level NO_x for USC option)

$[O_3]_{bkgd}$ = 50 ppb (107 µg/m^3) (extracted from TAPM-CTM predictions for the Project domain)

$[NO_2]_{bkgd}$ = 79 µg/m^3 (maximum 1-hour average NO_2 in 2001 at Blackmans Flat)

Therefore,

$[NO_2]_{total} = \{0.1 \times 660\} + MIN\{0.9 \times 660, 46/48 \times 107\} + 79$

$[NO_2]_{total} = 66 + 103 + 79$

$[NO_2]_{total}$ = 248 µg/m^3

The predicted maximum 1-hour average NO_2 concentration is therefore 248 µg/m^3, which is essentially the same as the DECCW criterion of 246 µg/m^3 and approximately 30% lower than the 365 µg/m^3 maximum that was presented in the air quality assessment. Given that the maximum levels occur next to the power station site (Figure 11 of air quality assessment), it follows that maximum NO_2 concentrations will be below 246 µg/m^3 at all sensitive receptor locations.

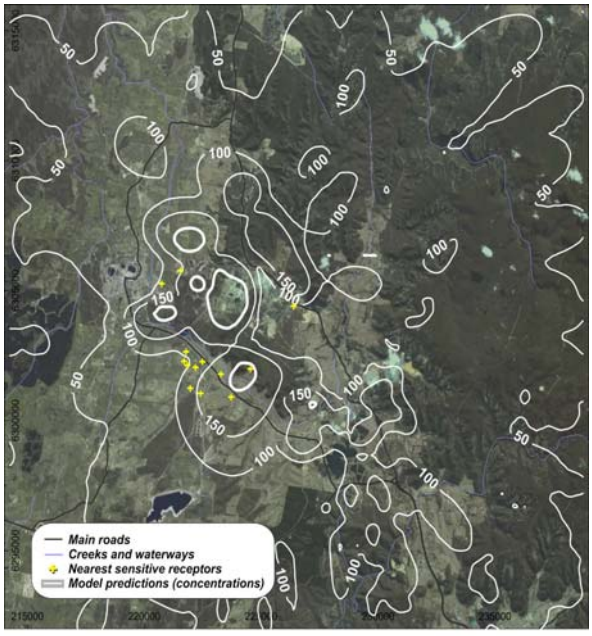
The "Level 1" assessment using OLM, discussed above, is a conservative approach since maximum predicted and background levels are assumed to occur at the same time.

Cumulative scenarios

Figure 2-2 shows the cumulative isopleths for the model scenario which includes Mt Piper A, Wallerawang and the proposed Mt Piper Extension (USC). These results assume that 30% of the NO_x is NO_2, at the point of maximum 1-hour average ground-level concentration. From the revised NO_2

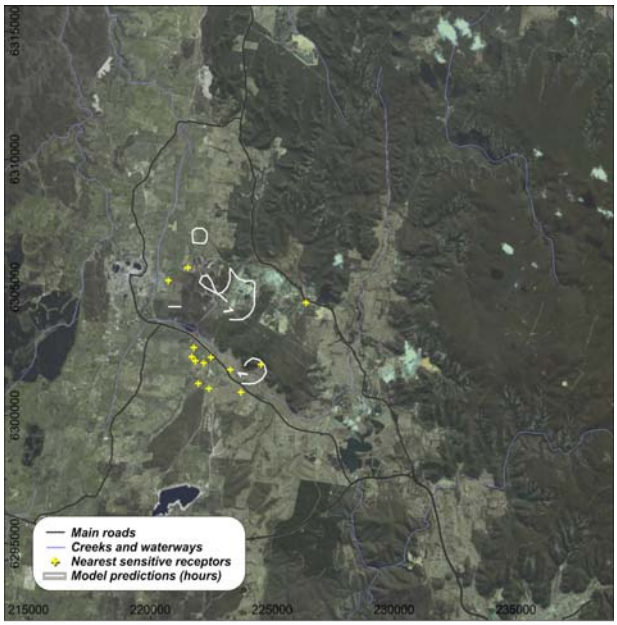
assessment using OLM and given in Section 2.2.1 above, the maximum 1-hour average NO_2 concentrations will be 248 µg/m^3 rather than the 365 µg/m^3 maximum that was presented in the air quality assessment. Therefore, the results in Figure 2-2 are higher than expected impacts and the predicted number of hours above the 246 µg/m^3 criterion will be essentially zero at sensitive receptor locations.

Figure 2-2 Predicted NO_2 impacts due to Mt Piper, Wallerawang and Mt Piper Extension (USC)



Mt Piper A plus Wallerawang plus Mt Piper B (USC)

Maximum 1-hour average concentrations (µg/m^3) (assumes 30% of the NO_x is NO_2)



Mt Piper A plus Wallerawang plus Mt Piper B (USC)

Number of hours above 246 µg/m^3 (assumes 30% of the NO_x is NO_2)

SO_2 Exceedances

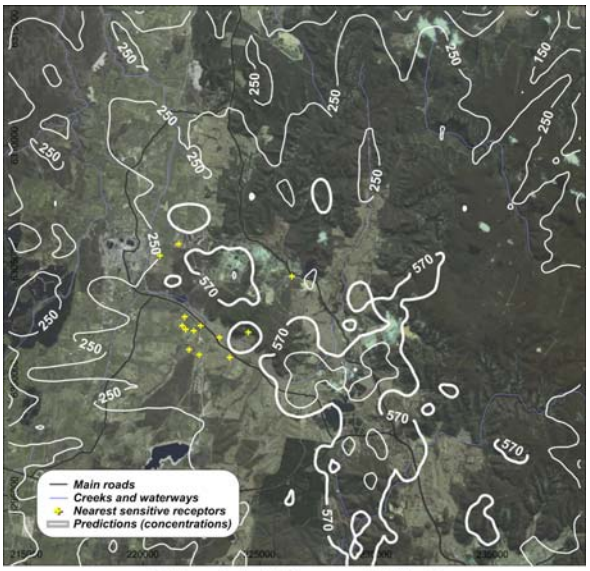
Figure 2-3 shows the cumulative isopleths which include the following scenarios:

- Mt Piper and Wallerawang (that is, existing / base case); and
- Mt Piper Wallerawang and the proposed Mt Piper Extension (USC)

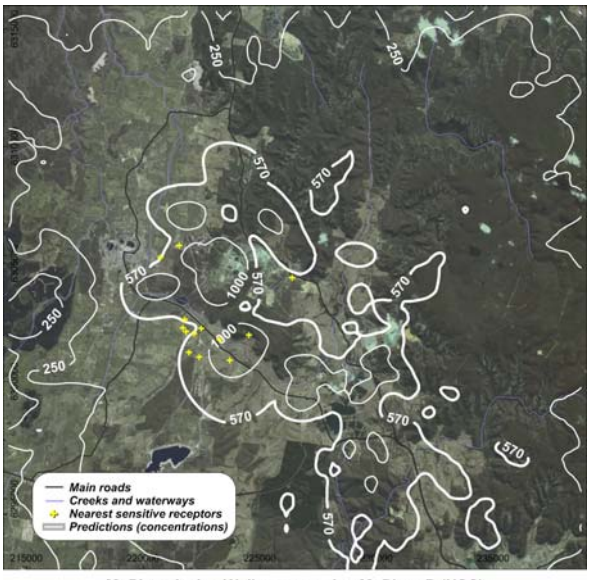
Maximum 1-hour average SO_2 concentrations are presented, as well as the predicted number of hours above 570 µg/m^3. It can be seen from this figure that the spatial extent of maximum 1-hour average SO_2 concentrations is predicted to increase when the Mt Piper Extension added to the existing sources. Also, the extent of areas above the 570 µg/m^3 criterion is predicted to increase. The maximum number of hours above 570 µg/m^3 is predicted to remain unchanged at 5 per year (Table 13 of air quality assessment). This maximum is dominated by the Wallerawang sources.

Figure 2-3 Predicted SO_2 impacts

Maximum 1-hour average concentrations (µg/m^3)

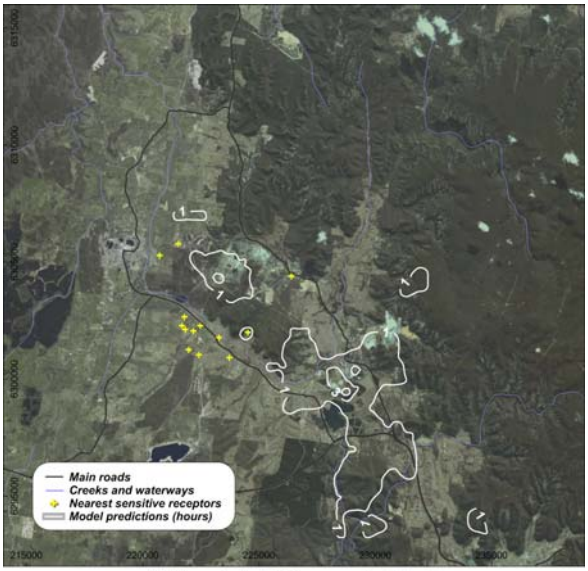


Mt Piper A plus Wallerawang (existing)

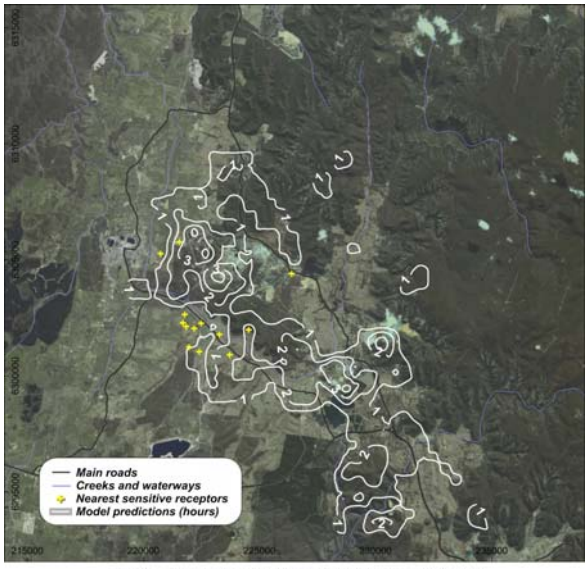


Mt Piper A plus Wallerawang plus Mt Piper B (USC)

Number of hours above 570 µg/m^3



Mt Piper A plus Wallerawang (existing)



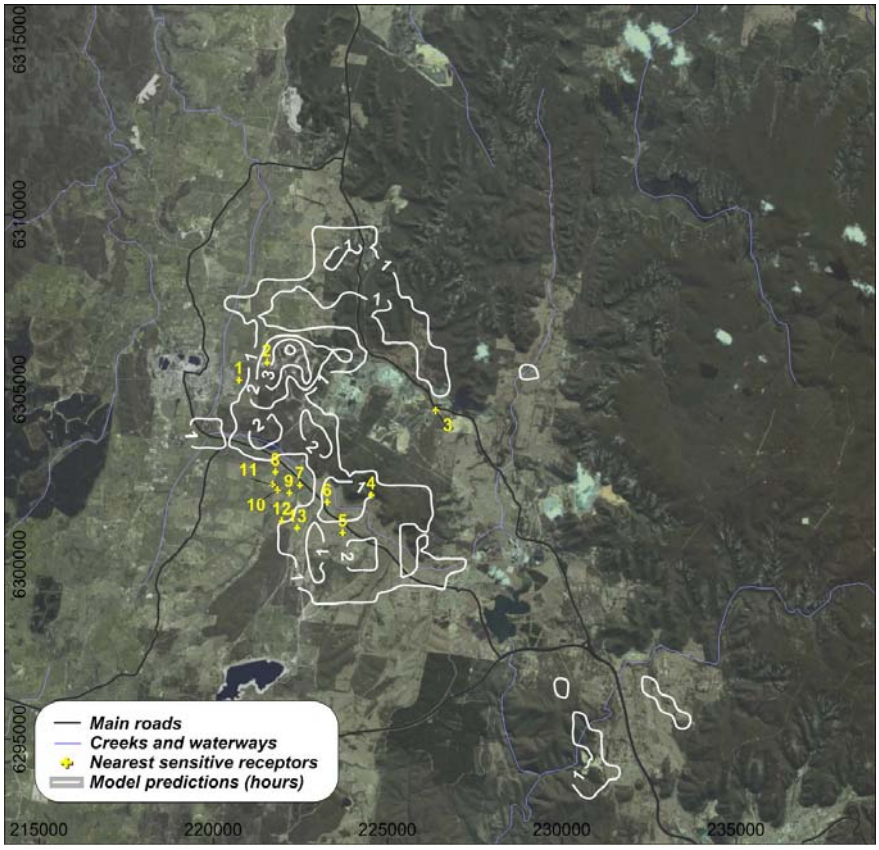
Mt Piper A plus Wallerawang plus Mt Piper B (USC)

Figure 2-4 shows the predicted change in the number of hours above 570 µg/m^3, after the Mt Piper Extension (USC) source is added to the model. Five of the identified receptor locations (yellow crosses) are predicted to experience an additional hour per year above the 570 µg/m^3 criterion.

It was noted in the air quality assessment that predicted maximum 1-hour average SO_2 concentrations were much higher than those which are currently, and have historically, been monitored in the region (that is, maximum predicted levels of 1,767 µg/m^3 versus 712 µg/m^3 as the maximum measured result from the past eight years). Interpretation of the results presented in this section, and in the air quality assessment, should therefore take into consideration the likely over-prediction of maximum short-term SO_2 concentrations.

The results provided in Figures 2-3 and 2-4 are consistent with the outcomes discussed in the air quality assessment.

Figure 2-4 Predicted change in the number of hours above 570 µg/m^3 (SO_2)



Mt Piper A plus Wallerawang plus Mt Piper B (USC)

Potential Impacts on Vegetation

The omission of the 90-day criteria for HF, and subsequent assessment was not intentional. Table 13 of the air quality assessment showed that the maximum 30-day average HF concentration at all ground-level locations was 0.1 µg/m^3. The 30-day average will be higher than the 90-day average and since 0.1 µg/m^3 is lower than the most stringent 90-day average criterion (that is, 0.25 µg/m^3 for

specialised land uses), it follows that the dispersion modelling demonstrates compliance at all ground-level locations. The assessment has demonstrated that the proposal would not cause exceedances of air quality criteria (that relate to the protection of sensitive land-uses) at any ground-level location in the study domain. The requirement to define and identify any sensitive land uses is therefore irrelevant.

Model Performance Assessment

The air quality assessments provided some evidence to suggest that the second highest model predictions may be a better indicator of expected maximum impacts. This was based on comparisons of model predictions with measurement data which showed a large over-prediction (90% higher than measured) and a smaller under-prediction (24% lower than measured). However, it is recognised that DECCW may not see it as appropriate to use the second (or third) highest model prediction to compare with criteria that relate to maximum levels and for this reason the air quality assessment focussed on comparing maximum levels with the relevant air quality criteria.

The DECCW submission stated that "*Holmes (2005) predicted maximum 1-hour and 24-hour SO_2 impacts that were lower than the observed maximum SO_2 concentrations at Blackmans Flat and Wallerawang monitoring stations*". This is incorrect as Holmes (2005) predicted higher than measured for Blackmans Flat and lower than measured for Wallerawang for maximum 1-hour average SO_2 concentrations. Table 2-5 shows the comparisons, including the recent SKM assessment results.

Table 2-5 Comparison of model predictions with measured concentrations

Parameter	Blackman's Flat site			Wallerawang site		
	Measured	Predicted (Holmes 2005)	Predicted (SKM 2009)	Measured	Predicted (Holmes 2005)	Predicted (SKM 2009)
Maximum 1-hour average SO_2 ($\mu g/m^3$)	353	359	269	424	345	795

Table 2-6 shows the differences between the Holmes 2005 and SKM 2009 modelling methodologies. There are mixed results in terms of predicted air quality impacts for the Holmes 2005 and SKM 2009 modelling methodologies, with higher and lower concentrations predicted, depending on the ground-level location. Dispersions model updates are usually available when there have been advancements in the science, or there were bug fixes, so it is common practice to adopt the most recent model version for assessment purposes.

Table 2-6 Comparison of model methodologies

Parameter	Value / setting		Comment
	Holmes 2005	SKM 2009	
Meteorological data year	2001	2001	The same data
Hourly varying emissions data	2001, supplied by Connell Wagner	2001, supplied by Connell Wagner	The same data
Topographical data	AUSLIG 9 arc second (~250 m resolution) data	NASA STRM 3 arc second (~90 m resolution) data	Potentially better representation of topography in the SKM 2009 study
Land use data	Digitized from aerial imagery	Digitized from aerial imagery	Expected to be similar data
Prognostic model for upper air meteorological data	TAPM v2.0	TAPM v4.0.2	Updated model, with improvements to meteorological predictions (according to published data)
Diagnostic meteorological model	CALMET v5.542	CALMET v6.326	Minimal difference in model output expected from these two model versions, due to hourly meteorological data only.
Pollution model	CALPUFF v5.714	CALPUFF v6.263	Minimal difference in model output expected from these two model versions, due to hourly meteorological data only.

Dust

Section 9.5 of the air quality assessment identifies the potential sources of fugitive emissions for the Project construction. Suitable dust mitigation measures have also been noted and it is assumed that a dust management plan will be implemented during the construction phase. It is unclear what level of detail is required for future assessment of particle emissions from the proposal.

Conditions of Approval

A review of the recommended conditions of approval is discussed below.

The limits that apply to Mt Piper are essentially those specified in the POEO Clean Air Regulations for Group 5 electricity generation activities except for emissions of NOx. For NOx emissions Group 5 has a limit of 800mg/m^3, whereas Mt Piper has a 1500mg/m^3 limit. The suggested limit for Mt Piper Extension is 500mg/m^3 which is consistent with new plant and equipment (Group 6). Actual NOx emissions for Mt Piper are of the order of 800mg/m^3, with levels reaching up to 1,400 mg/m^3.

The DECCW submission for Mt Piper Extension proposes a particulate emission limit of 30 mg/m^3 which is less than the Group 6 limit of 50 mg/m^3. The more stringent limit of 30 mg/m^3 should not be

applied as OEM guarantees cannot be obtained for this figure and it can be exceeded during bag failures. Mt Piper technically is Group 4 and particulate emission limit should be 100mg/m^3. As a consequence of the Mt Piper Upgrade and DA modification, Mt Piper is deemed to be Group 5 and therefore has a particulate emission of 100 mg/m^3. Best available technology should be able to cope with a more stringent limit but manufacturers will not guarantee better than 50 mg/m^3.

The NOx limits requested are 500 mg/m^3 which are Group 6 limits and no limits are proposed for SOx. These are acceptable.

DECCW has proposed continuous monitoring for particulates, NOx and SOx. We would consider monitoring requirements should be consistent with Group 6 CAPER requirements.

There is a requirement for a third ambient air monitoring station in the vicinity of Portland. This is acceptable.

DECCW has indicated that the proponent shall ensure that the design of the Mt Piper extension project provides for the retro-fitting, if necessary, of flue gas desulphurization technology. In response any retro-fitting of flue gas desulphurisation technology would only be carried out where technically feasible and economically viable. There is insufficient water for wet desulphurisation and dry desulphurisation is costly and unproven on 1,000 MW USC units. Current development trends for most post combustion carbon capture (PCCC) technologies indicate the need for desulphurisation. Some PCCC technologies (currently under development but yet to be proven at scale) are net water producers (extracting moisture from the flue gas), potentially allowing wet desulphurisation as part of the PCCC plant. In short, any desulphurisation is likely to be part of a future PCCC plant when such a plant is technically feasible and economically viable under an emissions trading scheme.

Greenhouse Gas Emissions

There are no responses required in this section. The recommended conditions of approval are acknowledged.

Noise and Vibration

Review of noise sensitive receivers

The proponent would undertake a review of residential locations and proposed noise licence conditions prior to accepting the “general limit” condition in Table 26.1 of the DECCW recommendations.

Noise modelling scenarios

Comments under Noise Modelling scenarios in DECCW submission are addressed below:

- The Submission queries the possible ambiguity of the report regarding the wind direction used for the assessment. The report states in Section 5.1 and 6.1 that the results for both the assessed met and INP default met conditions are included in the results. Therefore, while the INP default conditions may tend to overestimate the impacts in some areas, the assessment of site specific weather conditions has also been undertaken for comparison. The site specific met conditions are expected to provide a more realistic indication of noise impacts from the site;
- The DECCW submission states it is not prepared to licence for noise levels that are higher than the PSNL because of uncertainty of the inclusion of the WRCU in the assessment;

  The NIA in section 5.1 and 6.1 states that the modelling accounted for the influence of the WRCU in the modelling assessment. This was carried out in a predictive capacity as this facility is not yet built. Furthermore the inclusion of the WRCU in the modelling in conjunction with the INP default meteorological conditions and the application of the Low Frequency Noise Penalty is the main cause of noise level predictions being higher than the PSNL. It is expected that the noise level predictions would indicate lower levels are achievable in a more detailed assessment of the Proposal, once the WRCU is operational, and more details of the CCGT or coal fired plant are known;
- The DECCW is not prepared to licence for noise levels that are higher than the PSNL because of the uncertainty of the level of mitigation identified for the proposed gas fired plant. The NIA identifies in Section 6.1.3 that the CCGT used for the modelling exercise has been based on an actual noise data collected from a CCGT plant, which incorporates attenuation measures. At concept approval stage it is not possible to determine if this is the maximum attenuation that can be supplied from all available options although it is expected that any attenuation measures over and above those assumed for the modelled case would make that option financially uncompetitive and hence not commercially viable;
- DECCW notes there is insufficient information in the EA to apportion 'noise allocations' to each potential entity and that there would be many common plant, for example, the ash extraction plant, supply coal area etc.

  This appears to be a licensing issue and should not affect the licence noise level for noise impacts at residential locations.

The recommended conditions of approval appear to be generally in-line with the predicted noise impacts from the Proposal, notwithstanding the level of conservatism built in to the predictions based on worst case meteorological conditions and the application of the Low Frequency Noise penalty to the overall site noise emissions.

Water

No response to the submission is required. The standard recommended conditions of approval are acknowledged.

Aboriginal Cultural Heritage

Community Consultation

The initial Interim Guidelines letters were sent to DECCW, Bathurst Local Aboriginal Land Council, Lithgow City Council, the Office of the Registrar Aboriginal Land Rights Act 1983 and the NSW Native Title Services on 27 July 2009 with a closing date of 7 August 2009. Any responses received after the date were included in the consultation process. The newspaper advertisement was placed in *The Lithgow Mercury* on 18 July 2009 with a closing date of 28 July 2008. Any responses received after this date were included in the consultation process.

Responses to the public notice and letters were received from:

- Bathurst Local Aboriginal Land Council (BLALC);
- NSW DECCW;
- Lithgow City Council; and
- The Office of the Registrar Aboriginal Land Rights Act 1983.

A methodology and an invitation to provide a written report providing their views and assessment of the Aboriginal cultural values of the study area were sent to Bathurst LALC for comment on 3rd August 2009, with a reply date for comment of 24th August 2009. The methodology was not sent to DECCW, Lithgow City Council or the Office of the Registrar as they were contacted initially to obtain information on appropriate indigenous persons or groups to contact.

The DECCW provided a list of known Aboriginal parties that the DECCW felt were likely to have an interest in the project. A letter was sent to each group on 12th August 2009, with a closing date of the 20th August, 2009, asking if they had an interest in the project. Any responses received after the date were included in the consultation process.

Responses were received from:

- Stuart Cutmore (via telephone);
- Wayne Williams (via telephone);
- Sharon Williams (via telephone);
- Shaun Williams (via telephone);
- John Williams (via telephone);
- Dean Murray (via telephone);
- Gundungurra Aboriginal Heritage Association Inc.
- Neville Williams on behalf of Mitchell Cutmore
- Wiradjuri Traditional Owners Central West Aboriginal Corporation;
- Warrabinga Native Title Claimants;

- North East Wiradjuri Company Ltd; and
- Dhuuluu-Yala Aboriginal Corporation.

The project methodology and an invitation to provide a written report providing views and assessment of the Aboriginal cultural values of the study area was sent to each of the second list of groups on 20th August 2009 and 10th September 2009 with a reply date of Thursday 10th September 2009 and 24th September 2009.

One comment was received from Mr Neville Williams by the DECCW for this project; this comment was not sent directly to the project but was forwarded to the project from the DECCW.

Mr Neville Williams did not accept the methodology, in particular that Aboriginal representatives would not be invited onto site unless Aboriginal sites were located. Mr Williams requested that a meeting of Aboriginal stakeholders be called to agree on an appropriate methodology. Mr Williams requested that Aboriginal representatives accompany archaeologists on the survey and that Aboriginal representatives be employed and paid for their involvement.

No further comments on the methodology have been received from any of the registered stakeholders to date.

It was decided by the proponent not to invite Aboriginal representatives to the field survey of the study area due to the reasons outlined below and as provided in the methodology sent to each registered group. All registered groups have been involved in the project and have been given the opportunity to provide input into the project methodology; all registered groups will be provided the opportunity to review the report for the project.

No Aboriginal sites were located within the study area.

In response to the Proponents interpretation of the guidelines*:* The Guidelines require that: ”the number of Aboriginal people that a proponent might engage in the archaeological assessment will depend on the scale and nature of the project ….the number and type of services providers to be engaged is a matter for the proponents to determine” (Interim Guidelines pg 8).

Aboriginal Participation in Survey

The Aboriginal stakeholders were not invited to participate in the field survey of the study area due to safety considerations and, in particular, the highly disturbed nature of the site. If Aboriginal archaeological sites were identified within the study area then representatives from the Aboriginal community were to be invited to inspect the area. No sites were identified in the area.

Prior to the establishment of the Mount Piper power station, much of the site had been used as a series of open cut coal mines, exploiting the Illawarra Coal Measures. Most of the landscape within the

existing power station perimeter has been heavily disturbed and reworked as a result of previous mining and construction activity up to the present date.

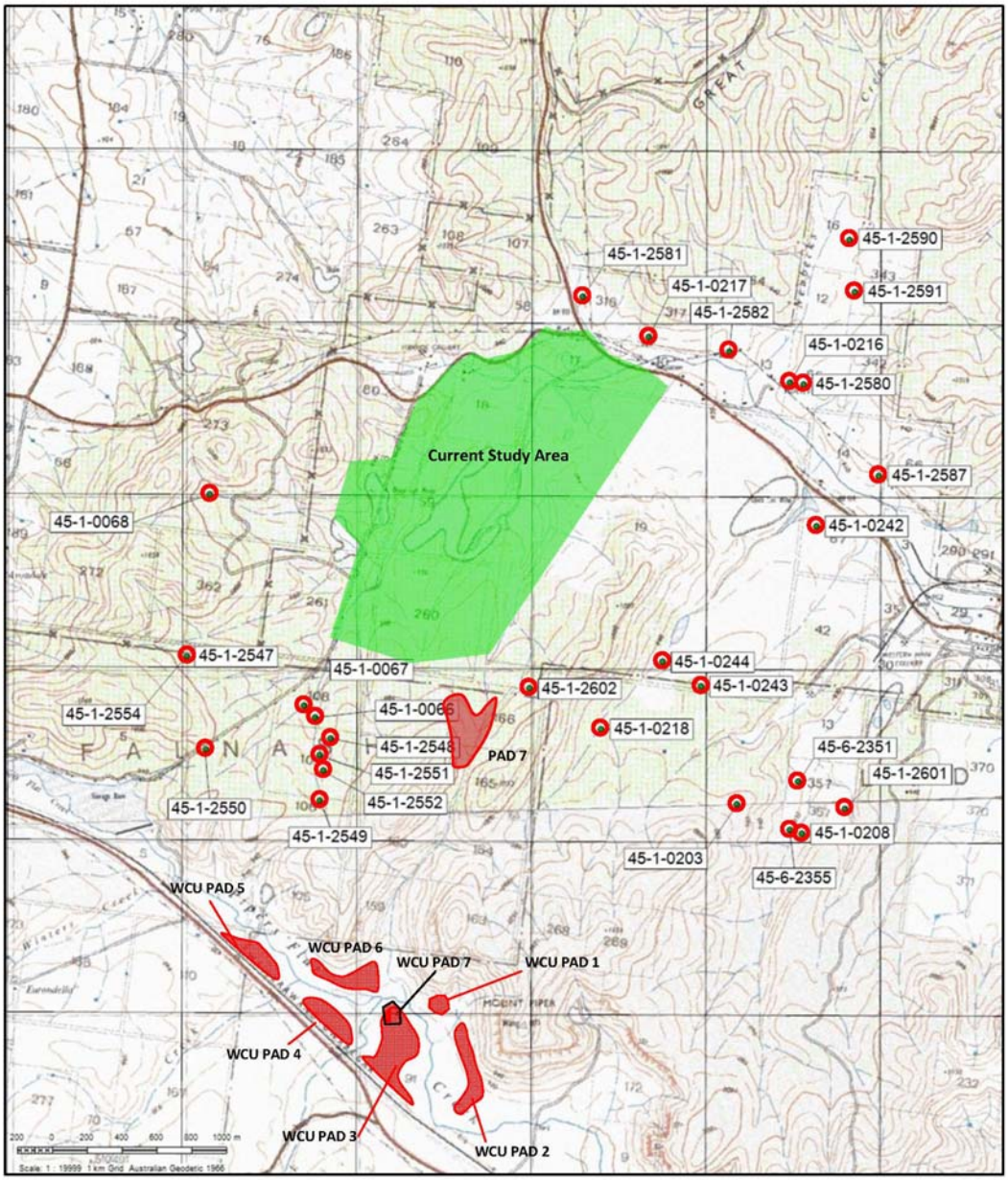
The Mount Piper study area is a working coal fired power station that has specific access and induction requirements. It was felt by the proponent that escorting a large group of people around the study area was not in the best interest of both those involved in the survey and the running of the power station. DECCW does not regard participation of Aboriginal communities in archaeological field assessments as 'consultation'. DECCW stipulates that Aboriginal cultural interests or values in a particular area of land or sites are separate from archaeological assessments and should be made by Aboriginal people themselves. These issues and the approach to be taken were outlined in the methodology sent to each registered group. Only one response was received on the methodology so it was assumed that the remaining stakeholder groups/individuals agreed with this approach.

Mapping

A modified map showing sites is shown in **Figure 2-5** below.

Mapping

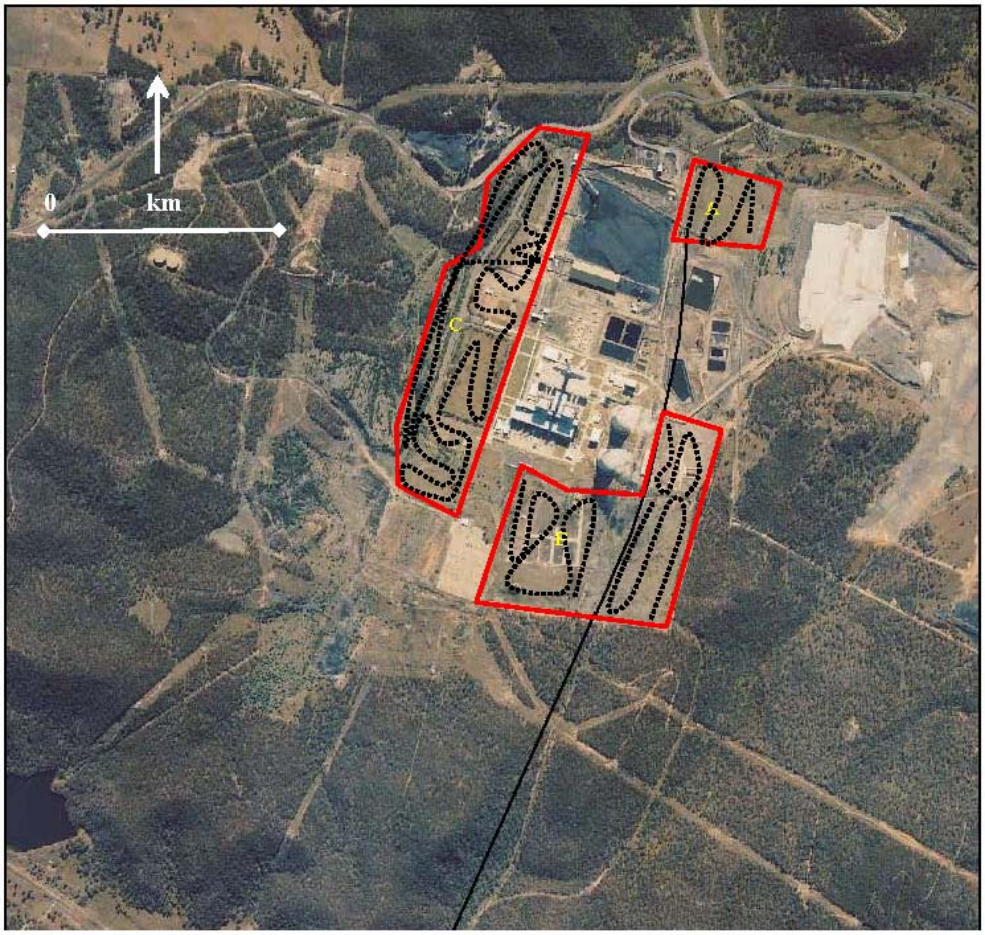
A modified map showing sites is shown in **Figure 2-5** below.



- **Figure 2-5 Location of Registered Aboriginal Sites**

Survey Coverage

The areas surveyed are shown in Figure 2-6 below. The doted lines show the path covered by the archaeologist and assistant. All landform units within the study area were surveyed.



- **Figure 2-6 Surveyed areas**

Recommended conditions of approval

The recommended conditions of approval are acknowledged.

Threatened Species

Comments are acknowledged. No response is required.

Waste

Issues relating to ash management which have been raised will be addressed in the planning application for ash placement. Recommended conditions of approval are acknowledged.

2.2 Department of Industry and Investment

2.2.1 Submission

The Department wishes to see that any new coal fired power station employs world's best practice low emission technology. Whether the fuel source selected is coal or natural gas the power station should also be carbon capture and storage (CCS) ready. As the proponent has made statements of commitment in the Environmental Assessment to this effect, the Department recommends that this becomes a condition of approval.

The Department is satisfied that this development will not result in any loss of aquatic habitat or fisheries resources.

The impact of the extractive water use on aquatic habitat and threatened species (such as Macquarie Perch within the Cox's River) should be reviewed when the Water Management Licence is reviewed (by the Department of Environment, Climate Change and Water's Office of Water) in 2010.

The existing Mt Piper Power Station uses significant amounts of water, but within the requirements of its existing Water Management Licence, Although the proposed extension of the power station will require extra water requirements of up to 1,100 ML per year, the ongoing use of mine water will ensure that there is no additional drawing of surface water on the Coxs River or Fish River Supply Schemes beyond the existing licence arrangements,

The Department wishes to see that the "zero discharge" policy for wastewater is maintained due to possible contamination of discharge water into Neubecks Creek. As the proponent has made statements of commitment in the Environmental Assessment to this effect, the Department recommends that this requirement becomes a condition of approval.

2.2.2 Response

These comments are acknowledged.

2.3 Sydney Catchment Authority

2.3.1 Submission

Overall the SCA endorses the proposed conceptual wastewater and stormwater management measures for the water cycle management. However, the SCA considers the construction and operational water quality objectives stated in the Proponents Environmental Management Commitments are not sufficiently extensive to ensure the project will have a neutral or beneficial effect on water quality.

With regard to construction water quality objectives, it is also necessary to prevent additional pollutants from leaving the site and for discharges not to cause erosion of nearby waterways.

During the operational stage it is necessary to manage water quality runoff to waterways, but this will only partially assist in achieving a neutral or beneficial effect on water quality. It is also necessary to ensure additional impacts on groundwater do not occur.

A future proponent should be required to demonstrate in the project application that the proposed development can achieve a neutral or beneficial effect on water quality.

The SCA recommends that the above enhanced water quality objectives be included in any concept plan approval issued. To manage impacts on water quality including movement of metals to ground and surface waters, the SCA recommends monitoring of metals be required, including nickel, manganese, selenium, boron, arsenic, iron, lead and copper. It may be appropriate to include the monitoring of these metals as a requirement of the Environment Protection Licence.

With the potential effects of climate change and in particular the recent drought there may be reduction of the sustainable median extraction from Lake Lyell. The SCA considers the project will have a minor additional impact on flows in the Coxs River catchment and therefore on catchment yield.

The SCA would be concerned should any additional usage of water from the Coxs River catchment be proposed in the future. The assessment process should identify impacts of the project on the yield of water from the Coxs River catchment to Warragamba Dam.

The SCA's inspection of the stormwater discharge point at Neubecks Creek immediately upstream of the Castlereagh Highway identified the creek as highly degraded from the discharge point to the highway intersection. The SCA recommends this section of the creek be rehabilitated and that vehicles be prevented from crossing the banks and bed of the creek.

The inspection also highlighted that the stormwater holding pond may be undersized and that the water in the pond is not of a high quality. The SCA recommends that the sizing of this pond be reviewed and consideration be given to installing a baffle in the pond to steady the water and allow settlement of sediments.

Preliminary investigations undertaken by the SCA indicate that there is potential for the existing ash disposal area to be impacting on water quality. This issue requires detailed investigation in the project application. The SCA would appreciate being involved in any further environmental assessment and consultation process associated with the application and the opportunity to comment on any draft conditions.

The EA does not contain sufficient information to enable the SCA to undertake a comprehensive and detailed assessment of the project with respect to potential impacts on water quality and water quantity. The SCA understands that this is in part due to the conceptual nature of the application.

The SCA notes the proponent is seeking concept approval. The SCA understands that if concept approval is issued it is likely that further details will be developed and that environmental assessment will be undertaken once greater certainty of the project is assured.

The SCA recommends that the following conditions be included in any concept plan approval issued:

- A detailed water cycle management assessment, prepared in consultation with the SCA, must be undertaken and submitted with the project application;
- The assessment must demonstrate how the project will achieve a neutral or beneficial effect on water quality during the construction and operational stages (and contain the necessary avoidance, minimisation, mitigation and offset measures required to achieve this outcome);
- The assessment must address the following:

  Water requirements and supply - include the details on water requirement volumes and the sources of water supply including a catchment scaled map for water supply

  Wastewater and stormwater management - must include:

  - a detailed description of the wastewater and stormwater treatment, storage and reuse system including a flow diagram showing capacity of the structures and details of the operational and maintenance procedures;
  - details of the sources and volumes of wastewater and stormwater produced, recycled and disposed of; • details of the sources and quantities of sludge produced and disposed of and the location of disposal;
  - details of the quantity and quality of stormwater discharged to Neubecks Creek;
  - where wastewater, stormwater and sludge is disposed of on-site (e.g. for blending with ash) or discharged off-site (e.g. to Neubecks Creek) or disposed of off-site, provide estimates of total quantity, estimated quality, potential pollutants, total pollutant loading and concentrations and associated impacts on ground and surface water quality.

  The *design* for all structures proposed for collection, storage and treatment of wastewater and stormwater must consider:

  - appropriate design and hydraulic sizing to cater for the maximum expected volumes in order to prevent any overflows *and/or* to provide sufficient residence time to allow settlement of particles,

- where any structure is proposed to be shared with the existing Mt Piper Power Station system (e.g. clean water pond), provide justification for the hydraulic sizing,
- appropriate lining to prevent infiltration to groundwater, and
- the desludging and appropriate sludge disposal.

Domestic Wastewater Management· must include:

- estimation of the expected average and peak wastewater loads during construction and operation stages,
- the design capacity of the existing domestic wastewater management system and justification to treat average and peak wastewater loads expected to be generated for Mt Piper extension.

Management of Chemicals· must consider storage in a designated covered area underlain by sealed or concrete floor. The storage areas must be located away from site boundaries, concentrated stormwater and wastewater flows and stormwater drainage lines and that storage areas including for fuels, oils and chemicals to have appropriately sized bunding.

Changes to existing water management or environment pollution licences· provide details of any changes required to the current Environment Protection Licence (EPL) and Water Management Licence (WML).

Water quality impacts· provide details about likely pollutants of concern during construction and operational stages, the estimation of the pre and post development pollutant loads, concentrations of pollutants and proposed water quality protection measures.

Cumulative impacts - the cumulative impacts of the project must be considered and the impacts associated with past, present and future land uses in the catchment of Neubecks Creek and Coxs River (upstream of the confluence of Coxs River with Farmers Creek) must be taken into account including impacts of ash disposal from existing and proposed Mt Piper Power Station, impacts of blowdown water currently discharged downstream Lake Wallace from the Wallerawang Power Station and the measures to prevent impact on downstream water quality particularly salinity.

The SCA recommends that the following conditions be included in any concept plan approval issued:

- an outline of the CEMP must be prepared and submitted with the project application
- The SCA expects the CEMP to contain a detailed Soil and Water Management Plan (SWMP) for the construction stage of the project which meets the requirements outlined in Chapter 2 of the NSW Landcom's Soils and Construction: Managing Urban Stormwater (2004) manual- the "Blue Book".
- The SWMP should incorporate the following:
  - separation of clean stormwater runoff from dirty stormwater runoff,

- provision for appropriately designed sediment basins, traps, bunds, earth banks and fences to capture and treat dirty runoff, recycling of captured water to minimise off-site disposal and the regime for the removal of accumulated sediments as required,
- provision for storage of chemicals including fuels and oils within lined and bunded areas,
- provision for refuelling within a designated bunded area away from watercourses and concentrated stormwater flows,
- provision for a dedicated vehicle washing area within a bunded area with treatment and disposal of wastewater,
- provision for designated material stockpile area away from watercourses and concentrated stormwater flows,
- where possible, avoid disturbance of Neubecks Creek, and
- identification of the role and responsibilities for inspection and monitoring and procedures for management of accidental spills.

The SCA recommends that the following conditions be included in any concept plan approval issued:

- an outline of the OEMP must be prepared and submitted with the project application
- The SCA expects the OEMP to include but not be limited to:
  - details of the sources and volumes of water used at the plant;
  - a description of the wastewater and stormwater treatment, storage and reuse system and details of the operational and maintenance procedures;
  - details of the sources and volumes of wastewater and stormwater produced, recycled and disposed of;
  - details of the sources and quantities of sludge produced and disposed of and the location of disposal;
  - details of the quantity and. Quality of uncontaminated stormwater discharged to Neubecks Creek;
  - procedures and responsibilities for the inspection, monitoring and maintenance of all wastewater and stormwater management structures (including pipes, pits, ponds);
  - emergency procedures for spill management of any contaminants including fuels and oils;
  - responsibilities for dealing with, and reporting of any potential water quality or environmental incidents;
  - an environmental monitoring plan is to be developed and must include the locations of monitoring points, methodologies, analysis and frequencies. The monitoring plan must include but not be limited to:

- quantity of wastewater and stormwater recycled for processing,
- quantity and quality of wastewater used for ash conditioning,
- quantity and quality of stormwater discharged to Neubecks Creek,
- quantity and quality of sludge disposed of on-site,

The environmental monitoring plan must incorporate annual reporting to relevant agencies, with the reporting identifying appropriate mechanisms to modify management practices and procedures where deleterious impacts on water quality of Neubecks Creek are demonstrated.

2.3.2 Response

It is acknowledged that a future proponent would be required to demonstrate in the project application that the proposed development can achieve a neutral or beneficial effect on water quality and this may require more detailed studies than those undertaken for the concept application. However, the requirement of managing impacts on water quality including movement of metals to ground and surface waters by monitoring of metals would need to be considered in the context of any potential impacts based on results from the existing plant. There is no evidence of contamination from the existing plant operation and it is unreasonable to impose such a monitoring program without further information to justify it.

With the potential effects of climate change and in particular the recent drought there may indeed be reduction of the sustainable median extraction from Lake Lyell but this would need to be addressed in the context of the existing and any future licence to extract water from the Coxs River system.

The SCA's inspection of the stormwater discharge point at Neubecks Creek immediately upstream of the Castlereagh Highway identified the creek as highly degraded from the discharge point to the highway intersection and that the stormwater holding pond may be undersized and that the water in the pond is not of a high quality. The SCA recommendation for works at this site is not relevant to this application as it is proposed that a new and separate discharge point would be provided for the Mt Piper extension. The recommendations by SCA could be applied to the design of the new discharge point at project approval stage.

The EA does not contain detailed information with respect to potential impacts on water quality and water quantity. As noted it is likely that further details will be developed and that environmental assessment will be undertaken at the project approval stage.

The draft conditions of approval for the concept plan are acknowledged as appropriate.

2.4 Roads and Traffic Authority

2.4.1 Submission

Section 14.3 of the Environmental Assessment 'Traffic and Transport' does not adequately address the impacts of the construction traffic generated by the proposed development.

The proposal will not generate additional haulage traffic due to usage of either the coal unloader or the existing private haul road. Should this change the RTA will require the opportunity to assess impacts of any additional road haulage.

The RTA will not object to the proposed development subject to submission of a Construction Traffic Management Plan to the RTA that addresses the following:

- Measures to manage traffic impacts for 950 construction staff. Alternate transport options should be considered, i.e. provision of a shuttle bus for workers. Consideration should be given to staggering of shift start and finish times to minimise delays at the intersection of the Castlereagh Highway and Boulder Road.
- Parking facilities to be provided for construction traffic.
- There is potential for conflict between employee and contractor vehicles with school buses. Consideration should be given to the timing of shift changes to be outside the normal operating times of school buses.

2.4.2 Response

The traffic assessment undertaken was adequate for the concept application. A more detailed study would be required at project approval stage when more detail is available on access from the site to the road network and on traffic generated by construction and operational activities.

A construction Traffic Management Plan would be prepared following Project Approval and prior to construction commencing.

2.5 NSW Office of Water

2.5.1 Submission

With water supply security a key issue it is imperative that the appropriate water supply arrangements are made to service the proposed power station extension that will not undermine the existing reliability of power supply either on an ongoing basis or in periods of drought.

It is therefore requested that conditions of approval address water security contingencies during periods of drought and sustainability of water supply having regard to the water allocation under the current licence. This may necessitate a commercial risk assessment by Delta Electricity.

Delta Electricity is bound by flow-related extraction limits on its licence under Part 9 of the Water Act 1912. The flow availability scenario presented in Section 5.2.4 of the environmental assessment over estimates river flow availability under drought conditions, placing additional pressure on site operational water management and potentially imposing additional pressure on the Coxs River surface water source.

There is no commitment in the assessment to secure additional water access entitlements in order to meet release criteria from Lake Lyell, Lake Wallace and Thompsons Creek Dam.

NOW emphasises that Delta Electricity is legally obliged to meet both extraction and environmental flow release criteria.

Therefore, sourcing additional water via the water market to meet water demand for the existing power station and/or changes in generator operations is the only means available to increase on site water use. This may be achieved by purchase and trade of existing entitlement on the water market or by upgrade of water surplus transfers from nearby mining operations. These options are not canvassed in the assessment.

NOW recommends the following conditions for the project approval:

- Delta Electricity must ensure it has adequate water supply for all stages of electricity generation.
- In the event that water supply is not adequate to meet site demands, operations must be scaled down to meet available water.
- Delta Electricity must ensure environmental flow releases from Lake Lyell, Lake Wallace and Thompsons Creek Dam meet flow release criteria within access licence limits as determined by the NSW Office of Water.
- Within 12 months, Delta Electricity must revise site water demand and environmental flow release criteria to meet benchmarks as established by the NSW Office of Water and satisfy rules in force under any future gazetted Water Sharing Plan administered under the Water Management Act 2000.

2.5.2 Response

Delta has an extraction entitlement of 23,000ML pa from the Coxs River System, and an entitlement of 8,184ML per year from the FRWS. Delta also has access to ~7,000ML per year from Springvale /Angus Place.

At 90% Capacity Factor for MP1/2 and 80% CF for Wallerawang and a demand of 1,000ML for Mt Piper Extension, total demand equates to 32,000ML per year. Even with the most severe restrictions on FRWS such as Level 5, (i.e.60%) Delta will still have access to 33,000ML per year and will be able to operate within the current water allocations.

During times of water shortages or prolonged drought conditions Delta will carry out a number of staged actions to secure water for the three sites (Wallerawang, Mt Piper, Mt Piper Extension).

A strategy has been developed to manage the current drought conditions with actions currently in place to manage the current situation. Should the current situation worsen or if a similar situation occurs in the future the strategy will articulate actions to address the water supply issues.

This will include sourcing water from additional sources such as Lithgow state mine and other mines in the area, as well as installing additional water treatment plants. This strategy will also involve treatment where necessary to ensure that water quality does affect the ongoing operations for the power stations. One aspect of the strategy is that Mt Piper Extension will be allocated 1,000 ML from Delta's water allocations. Delta will then address water supplies for Wallerawang and Mt Piper from the remainder of the water allocations and other actions under the water strategy.

In summary Mt Piper Extension will be allocated 1,000 ML of water which will be sufficient for the proposed operations, and Delta will manage the Wallerawang and Mt Piper operations from the remainder of the water allocation and the implementation of the water management strategy. The allocation to Mt Piper extension would form part of the contractual guarantees from delta on water availability from its existing sources.

2.6 Lithgow City Council

2.6.1 Submission

Council is unanimous in its support for the development in relation to the potential economic benefits.

Lithgow Councils recommends the following conditions of approval:

- the applicant to investigate and implement the upgrade of the gas line from Mt Piper to also pick up nearby villages, particularly Portland, and [upgrade] the off take facility installed.
- the applicant to provide further information and address the potential impact on housing and services of any construction workforce.
- the application to provide further information and address the impact of the project on infrastructure, community facilities and services.

Lithgow Council would like to see a significant planning agreement put in place to enhance community facilities in the Lithgow LGA. Committing the applicant to a planning agreement contribution would allow for adequate enhancement to the area while the operations are in place.

From the information provided, outdated water figures (being 2001) have been used throughout the assessment. Council would require updated water modelling addressing adequate requirements for cooling (if any), sources and resultant impacts.

Lithgow Council's strong preference would be off public road transportation with supply from collieries within the Lithgow Local Government Area. For any proposed coal supply being sourced from outside the Lithgow LGA then Council would seek the applicant to provide justification that there will be no economic, employment and social impact on the Lithgow LGA.

It is noted in the 'Delta Electricity' correspondence dated 24 September that an independent 'Preliminary Environmental Assessment process for ash Storage' is currently being prepared. Should the 'coal powered' proposal be recommended it is imperative that these applications are assessed concurrently given the environmental issues associated with dry ash disposal, which include but are not limited to visual, environmental, dust, noise and amenity impacts. This would require special consideration if disposal is continued in proximity of nearby villages or populated areas. Council would like to see the assessment look at possibilities of utilising ash as a resource (eg construction material) rather than a waste product.

Information is required to be lodged indicating that environmental impacts of emissions have been adequately assessment. Cumulative impact of these emissions will need to be addressed as part of this justification.

2.6.2 Response

Matters relating to the location and supply points for gas were not required to be addressed in the EA and would be subject to a separate planning application.

Further assessment of the impacts caused by a construction workforce on services and infrastructure would be undertaken at Project Approval stage.

The basis for the comment on water figures from 2001 is not clear. More detail on water usage would, however, be used at Project Approval stage.

The supply of coal to the existing and future power stations is decision made on a commercial basis.

2.7 NSW Health Sydney West AHS

2.7.1 Submission

NSW Health strongly supports the view that the proposed CCGT gas operated plant represents the more acceptable option in terms of human health effects.

The potential increases in exposure to sulphur dioxide from the USC plant is of most concern, but there are other issues in relation to likely increments in other pollutants (mercury, dioxins, PAHs and regional ozone) associated with the USC coal option.

Sulphur dioxide is of most concern due to:

- Existing short-term concentrations exceeding guideline values
- Significant predicted increments with USC option
- Emerging health evidence that more stringent short term sulphur dioxide health guidelines are warranted

High rates of pre-existing respiratory and cardiovascular disease occur in the local area. SWAHS believes that the air quality assessment is based on a year with the lowest air pollution impacts, so that actual air quality may be poorer than predicted.

The location of the peak air pollution impact is on two of the most disadvantaged suburbs in SWAHS, potentially exacerbating existing health inequalities. Tables 8 and 10 in the Air Quality Assessment provide maximum monitored 1-hour SO_2 concentrations at Blackman's Flat and Wallerawang from 2001-2008. This data indicated that the existing air quality criterion has been exceeded in three of the eight years. The modelling suggests that exceedances of the criterion in the domain could have occurred up to 5 times in 2001.

Monitored data averaged over 10-minutes is not provided in the assessment. Estimates of sulphur dioxide impacts of the existing plants averaged over 10 minutes (Table 13) suggest exceedances of the 10-minute criterion occur more frequently than the 1-hour.

The modelling provided predicts that the 10-minute and I-hour sulphur dioxide impacts from the USC plant will exceed the existing Mt Piper impacts, particularly at Wallerawang (Table 13). The distribution of the impacts for the worst hour of the modelled year are shown in Figure 13. This demonstrates that significant increases in sulphur dioxide exposure from Mt Piper are expected over the same region most impacted by Wallerawang power station emissions, which is around the township of Wallerawang. Unfortunately the figure provided does not include the cumulative impact of all three sources.

DECC air quality assessment criteria were set in 2002. Subsequently the World Health Organisation has reviewed the health effects of sulphur dioxide (WHO 2006). The review found that while there was little new information on the respiratory effects of sulphur dioxide, reappraisal of earlier studies had focussed attention on the need to control exposures over shorter periods of time.

A suggestion of a separate effect of sulphur dioxide on the autonomic nervous system emerged in 2001. The WHO review noted that epidemiological studies are detecting adverse health effects (admissions for respiratory and cardiac disease, mortality) of sulphur dioxide at quite low ambient concentrations.

In regard to birth outcomes, sulphur dioxide has been associated with low birth weight and premature birth in a number of studies (Sram 2005).

The WHO review also recommended that the short term exposure guideline be set for exposure over 10 minutes at 0.0118ppm (500ug.m^3) as this is the exposure period over which acute health effects develop. This is almost 50% lower than the DECC criterion used in this assessment

The health status of people living in the Lithgow LGA is on many measures worse than in other parts of NSW. Some of the villages within this LGA will be those most impacted by emissions from the proposed power plant. These communities already have high levels of relative disadvantage, making them more susceptible to additional health impacts from environmental stressors such as air pollution.

Furthermore people in the Lithgow LGA already experience high levels of morbidity due to respiratory and cardiovascular diseases, the conditions most likely to be aggravated by exposure to sulphur dioxide.

The most recent Air Quality Guidelines from the WHO are emphatic about the need to consider the impacts of air pollution sources on disadvantaged populations. The proposal to continue monitoring of sulphur dioxide and nitrogen dioxide at Wallerawang and Blackman's Flat is also strongly supported.

We have also carefully reviewed the impacts on water quality and availability and under current supply arrangements the proposal does not appear pose any problems in terms of health. Water availability in the Lithgow area is an ongoing issue that requires close monitoring by the relevant agencies.

2.7.2 Response

NSW Health provided general comments on the air quality assessment, rather than requesting additional information. The key areas of concern for NSW Health comments are identified as:

- Increases in SO_2 concentrations from the USC option;
- The year selected for the air quality modelling simulations;
- Model over-prediction; and
- Emerging health evidence for short-term SO_2 exposure.

Increases in SO_2 concentrations from the USC option and model over-prediction

The air quality assessment identifies SO_2 as the main pollutant of interest for the proposed USC plant, due to a higher potential for exceedances of air quality criteria than for other pollutants. The assessment also provided predictions on the number of exceedances of SO_2 air quality criteria for the existing sources, as well as proposed sources. It was also concluded from the air quality assessment that the CCGT option would result in lower SO_2 impacts than the USC option. These outcomes are consistent with the NSW Health observations.

As noted by NSW Health, cumulative SO_2 plots which included the Mt Piper A, Wallerawang and proposed Mt Piper B sources were not provided in the air quality assessment, although results were summarise for this scenario in Table 13.

Figure 2-7 shows the cumulative isopleths which include the following scenarios:

- Mt Piper and Wallerawang (that is, existing / base case); and
- Mt Piper Wallerawang and the proposed Mt Piper Extension (USC).

Maximum 1-hour average SO_2 concentrations are presented, as well as the predicted number of hours above 570 µg/m^3. It can be seen from this figure that the spatial extent of maximum 1-hour average SO_2 concentrations is predicted to increase when the Mt Piper Extension source added to the existing sources. Also, the extent of areas above the 570 µg/m^3 criterion is predicted to increase. The maximum number of hours above 570 µg/m^3 is predicted to remain unchanged at 5 per year (Table 13 of air quality assessment). This maximum is dominated by the Wallerawang sources.

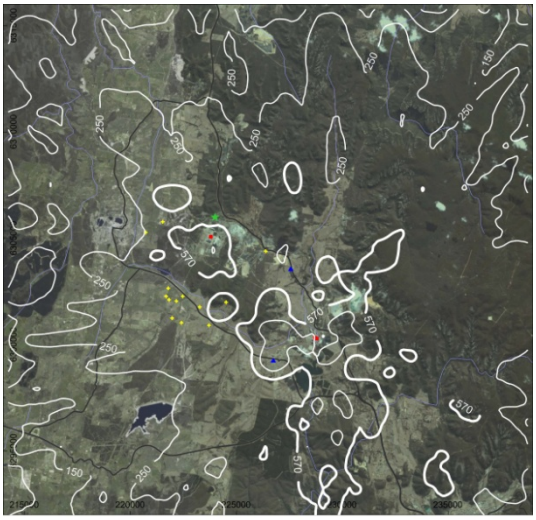
Figure 2-8 shows the predicted change in the number of hours above 570 µg/m^3, after the Mt Piper B (USC) source is added to the model. Five of the identified receptor locations (yellow crosses) are predicted to experience an additional hour per year above the 570 µg/m^3 criterion.

It was noted in the air quality assessment that predicted maximum 1-hour average SO_2 concentrations were much higher than those which are currently, and have historically, been monitored in the region. This provided some evidence that the model was potentially over-predicting short-term concentrations as the maximum predicted levels of 1,767 µg/m^3 were very much higher than the 712 µg/m^3 which was the maximum measured result from the past eight years of monitoring.

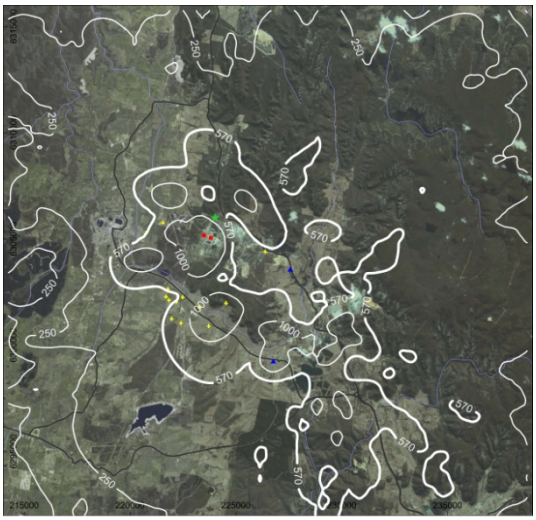
Interpretation of the results presented in this section, and in the air quality assessment, should therefore take into consideration the likely over-prediction of maximum short-term SO_2 concentrations.

Figure 2-7 Predicted SO_2 impacts

Maximum 1-hour average concentrations (µg/m^3)



Mt Piper A plus Wallerawang (existing)



Mt Piper A plus Wallerawang plus Mt Piper B (USC)

Number of hours above 570 µg/m^3

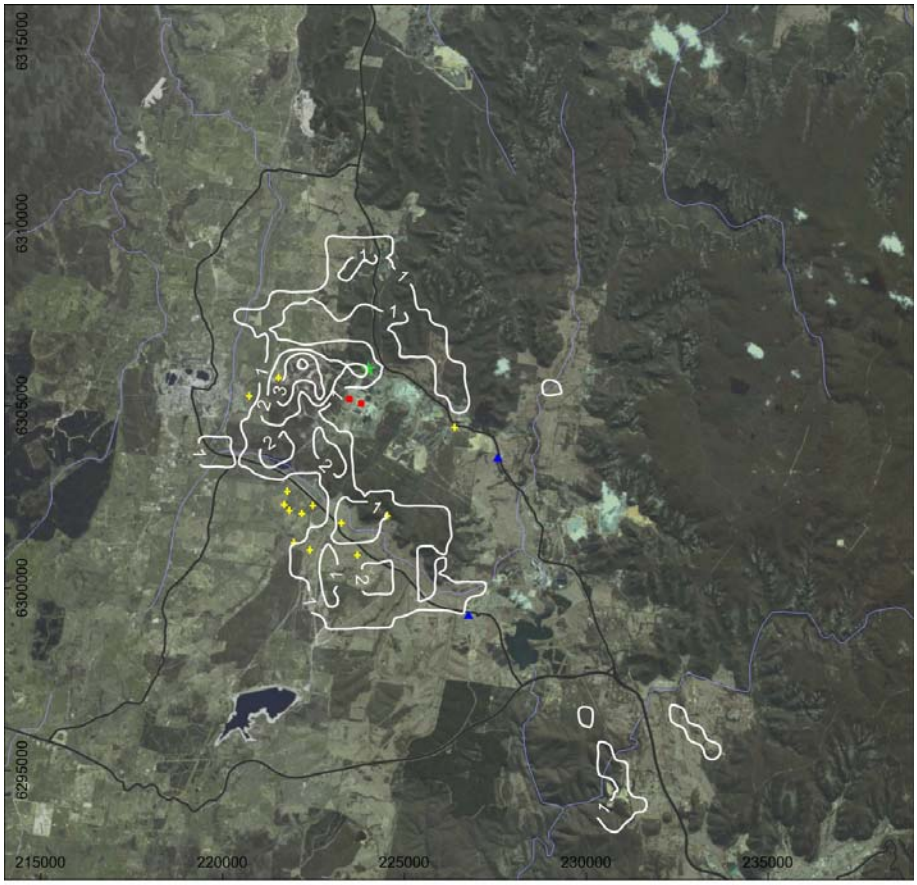
Mt Piper A plus Wallerawang (existing)

Mt Piper A plus Wallerawang plus Mt Piper B (USC)

The model performance assessment in Section 9.2 showed over-prediction for the Wallerawang monitoring site and a smaller under-prediction for the Blackmans Flat site. However, it should be noted that this comparison was based on hourly-varying "actual" emissions, rather than the maximum emission levels upon which the remainder of the assessment was based.

The results provided in Figures 2-7 and 2-8 are consistent with the outcomes discussed in the air quality assessment.

Figure 2-8 Predicted change in the number of hours above 570 µg/m^3 (SO_2)



The model simulation year

The selection of the simulation year is driven largely by the availability of reliable meteorological data. In addition, hourly varying emissions and air quality data are useful to facilitate a model performance assessment and the 2001 calendar year satisfied these three criteria.

The air quality monitoring data showed that there were no exceedances of SO_2 criteria in 2001, although this is not important for the assessment of future operational scenarios. The wind-roses (Figure 4 of the assessment) showed that wind patterns were very similar to subsequent years so the assertion that 2001 experienced particularly favourable dispersion conditions is not well founded without further explanation or analysis. Nevertheless, dispersion modelling using meteorology from the 2004 calendar year has been undertaken to assess any differences in model results, compared to the

2001 year modelled in the EA. The 2004 calendar year was chosen because this year had the best data recovery (after 2001) and the wind patterns were, again, similar to other years.

Table 2-7 shows the results for SO_2 using 2004 meteorology and for 1-hour average ground-level concentrations. The 1-hour averages are of most interest since no other averaging time was identified for potential exceedances of ground-level concentration criteria.

The results in Table 2-7 demonstrate that the assessment using the 2001 meteorological data does not result in significantly lower predictions than for an alternative year.

- **Table 2-7 Comparison of model results for different meteorological data**

Averaging time	Highest ground-level SO_2 concentration in model domain due to the proposed Mt Piper B (USC) emissions (µg/m^3)	
	2001 meteorological data (EA)	2004 meteorological data
Maximum 1-hour average	1,393	1,045

Emerging health evidence for short-term SO_2 exposure

The emerging health evidence for short-term SO_2 exposure has been noted.

The air quality assessment was required to follow the DECCW's *Approved Methods for the Modelling and Assessment of Air Pollutant in NSW*, published by the DEC in 2005. Since this publication, the DECCW has not prescribed more stringent air quality criteria.

2.8 Department of Defence

2.8.1 Submission

Defence indicated it had no concerns with the project but it may be necessary to refer the project to the Civil Aviation Safety Authority (CASA)

2.8.2 Response

A preliminary assessment of risk to aviation safety was described in Section 12.6 of the EA. If necessary a referral will be made at project approval stage.

2.9 Mid-Western Regional Council

2.9.1 Submission

Concerns raised by Council related to:

- Noise and dust associated with coal trains;
- Safety measures at rail crossings;

- Social and economic impacts from coal train movements.

2.9.2 Response

Coal train operations and potential impacts were not considered as part of this project. In so far as they were required to be considered, they were addressed in the planning approval documentation for the Western Rail Coal Unloader which was approved by the Minister for Planning earlier this year. Noise and air emissions from rail operations are generally subject to the licensing requirements for the operation of the rail system.

2.10 Marrickville Council

2.10.1 Submission

These two power stations combined, powered by natural gas or coal, will emit between 12.96 and 23.35 Mt of CO2-e in greenhouse gases each year, not including emissions associated with construction. These projected emissions represent up to 14.78% of current NSW greenhouse gas emissions, (according to the Department of Environment, Climate Change and Water current NSW emissions are just above 158 Mt CO2-e). The project would present a significant increase in greenhouse gas emissions, especially in the light of NSW State Plan targets for cleaner air and progress on greenhouse gas emissions.

2.10.2 Response

Whether NSW achieves its targets of reduction of greenhouse gas emissions is a matter for the NSW Government. The NSW Energy Reform Strategy of March 2009 noted that renewable fuels and gas are anticipated to increase their share of total generation capacity with the introduction of the Renewable Energy Target of 20% by 2020 and the CPRS, but that coal fired generators will still be expected to play a crucial role. Whether coal or gas (or neither) is selected at Mt Piper Extension will depend on the ability of the proponent to be able to develop and operate commercially within the framework of the Carbon Pollution Reduction Scheme proposed by the Government in that any new operator will be required to acquire permits each year for carbon emissions and surrender those permits for each tonne of greenhouse gas produced in the year. Permits will only be available up to the limit or cap set by the Government. The owner / operator of a new coal or gas fired power station would be required to operate within their ability to acquire permits.

2.11 City of Sydney Council

2.11.1 Submission

Council objected to the proposal on the basis that, should it proceed:

- Greenhouse gas emission targets would be adversely affected;
- Increased carbon prices will mean costs will be passed on to consumers;

- Funding should be allocated to decentralised low carbon energy projects and demand management and these avenues should be further explored as alternatives to new base load power plant;
- Efficiency of existing coal fired plant should be improved in preference to new plant being constructed.

2.11.2 Response

Whether NSW achieves its targets of reduction of greenhouse gas emissions is a matter for the NSW Government. Whether coal or gas (or neither) is selected at Mt Piper Extension will depend on the ability of the proponent to be able to develop and operate commercially within the framework of the Carbon Pollution Reduction Scheme proposed by the Commonwealth Government in that any new operator will be required to acquire permits each year for carbon emissions and surrender those permits for each tonne of greenhouse gas produced in the year. Permits will only be available up to the limit or cap set by the Government. The owner / operator of a new coal or gas fired power station would be required to operate commercially within their ability to acquire permits.

It was argued in a paper by UTS[2] that the take-up of distributed energy opportunities (energy efficiency, demand management and cogeneration) would mean the need for increased busload power could be delayed, given appropriate government policy. Should such opportunities be realised as a result of government policy, the effect on the need for new base-load generation will be determined in the competitive energy market place. At this time, the forecasts of the 2009 ESOO indicate the need for additional base load capacity as indicated above and is to that forecast shortfall that the project is responding. As with all projects, especially long lead projects, part of the project risk is that the demand may be deferred or may occur earlier than forecast.

Measures to improve existing coal fired plant have been examined by operators and, in some cases, works implemented. The decision as to whether such works are undertaken on the scale required is one of available technology and a commercial one undertaken in the context of cost of new plant versus upgrade of old plant. The introduction of technologically efficient baseload generation would be driven by a market based approach to the price of carbon, allowing the easing out of less efficient, older baseload technologies.

2.12 John Kaye MLC

2.12.1 Submission

The submission by Dr John Kaye MLC, NSW parliament on behalf of Greens NSW stated objections on the basis of:

[2] Rutovitz and Dunstan 2009. Meeting NSW Electricity Needs in a Carbon Constrained World. UTS 2009.

- The strategic justification was based on the results of the Owen report and its requirement for increased baseload power compared with the opportunities for demand management, co-generation and renewable power;
- Loss of jobs in renewable energy industries;
- Unacceptable increase in greenhouse gas emissions;
- Lack of consideration of alternative emission free generation technologies;
- The need for the project to be referred to the Commonwealth under the EPBC Act; and
- The lack of commercial viability of carbon capture and storage.

2.12.2 Response

The Owen report indicated that NSW needs to be prepared for new baseload generation from 2013/2014 to meet growing demand and to avoid energy shortfalls and it was forecast in 2007 that 85,000 GWh of electrical energy would be needed in NSW by 2013/2014 under a medium growth scenario and by 2016/2017 under a low growth one. The (more recent and up-to-date) 2009 Electricity Statement of Opportunities (ESOO) published by the Australian Energy Market Operator (AEMO) indicates that additional capacity of 182 MW is required in NSW in 2015/16 based on its demand/supply forecasts. The 2009 ESOO shows the need for new generation capacity over the next five to seven years and beyond. This is about the lead time for new base load generation.

It was argued in a paper by UTS[3] that the take-up of distributed energy opportunities (energy efficiency, demand management and cogeneration) would mean the need for increased busload power could be delayed, given appropriate government policy. Should such opportunities be realised as a result of government policy, the effect on the need for new base-load generation will be determined in the competitive energy market place. At this time, the forecasts of the 2009 ESOO indicate the need for additional base load capacity as indicated above and it is to that forecast shortfall that the project is responding. As with all projects, especially long lead projects, part of the project risk is that the demand may be deferred or may occur earlier than forecast.

No assessment of job opportunities for renewable energy projects was required for this assessment, nor was one provided.

Climate change due to increases in greenhouse gas emissions is generally acknowledged as a global crisis and the Commonwealth Government's draft CPRS legislation is regarded as a mechanism by which Australia is seeking to contribute to the global response to the crisis. The proposed development (whether gas or coal) is designed to fit within the likely structure of the Carbon Pollution Reduction Scheme proposed by the Government in that any new operator will be required to acquire

[3] Rutovitz and Dunstan 2009. Meeting NSW Electricity Needs in a Carbon Constrained World. UTS 2009.

permits each year for carbon emissions and surrender those permits for each tonne of greenhouse gas produced in the year. Permits will only be available up to the limit or cap set by the Government. The owner / operator of a new coal or gas fired power station would be required to operate within their ability to acquire permits.

The project was referred to the Commonwealth for consideration as a controlled action under the requirements of the Environment Protection and Biodiversity Conservation Act, 1999. The level of emissions of CO_2 from any proposed development is not an NES "trigger" under the Act and it was not considered by the DEWHA. The impacts of the proposal on Commonwealth listed threatened species were considered by the DEWHA and it was concluded by it that the Mt Piper Extension project is not a controlled action. A copy of the letter from DEWHA is attached in Appendix B.

The direct impacts of a Carbon Capture and Storage (CCS) system were not assessed as part of the project, but the need for its availability was considered and it was acknowledged that any new plant would need to be CCS "ready". Approval of a coal or gas fired plant is not contingent on immediately available CCS technology but a decision would be required, when CCS is commercially available, as to whether it is a better commercial decision to install the technology and reduce the level of greenhouse emissions or to continue to purchase permits within the constraints of the trading cap.

3. Community Submissions

Members of the community responded to the Environmental Assessment in the form of submissions forwarded to the Department of Planning. In total, 375 submissions were received from the community and interest groups and responses to these submissions are provided below. The submissions are reviewed according to the subject classification developed in the data base, as outlined in Appendix A.

3.1 Air Quality – local and regional

3.1.1 Submissions

There were many submissions that addressed this issue.

Many submissions suggested that new coal or gas fired power stations would drastically increase NSW greenhouse pollution by as much as 20 percent.

It was also suggested that local health impacts caused by coal train emissions and sulphur dioxide were of concern for residents and visitors. One submission noted that SO_2 emissions would exceed EEC and World Bank guidelines. The effects of particulate and PAH concentrations were raised, along with the need for an adequate buffer from the power station site.

3.1.2 Response

Greenhouse emissions were addressed in Chapter 10 and Appendix F. Local and regional air quality was addressed in Chapter 9 and Appendix E. They are addressed in detail in Section 3.4 below.

Coal train emissions were not considered as part of this project. In so far as they were required to be considered, they were addressed in the planning approval documentation for the Western Rail Coal Unloader which was approved by the Minister for Planning earlier this year. Emissions from rail operations are generally subject to the licensing requirements for the operation of the rail system. CO_2 emissions from the rail haulage of coal were considered in the greenhouse gas assessment described in Chapter 10, and the relative contribution of CO_2-e emissions in tonnes per year was identified. There is no requirement to assess health impacts from CO_2.

SO_2 emissions from the power station extension operation were assessed. . The criteria applicable for NSW (set as health based criteria) are those set by DECCW and consist of 570 ug/m^3 as a maximum 1-hr average, 228 ug/m^3 as a maximum 24-hour average and 60 ug/m^3 as an annual average. The modelling undertaken showed that for the USC option the maximum 1-hour average concentrations are predicted to increase , although the maximum number of hours above the DECC's 570 ug/m^3 criterion will remain unchanged from existing impacts, at 5 hours per year. Given that the modelled maximum concentrations are much higher than have been historically measured in the region and the

tendency for the dispersion model to over-estimate short term concentrations, the plant is unlikely to result in any air quality impacts from SO_2.

Modelling was also undertaken for other pollutants including particulates and polyaromatic hydrocarbons (PAHs). The predicted ground level concentrations of these pollutants were well below relevant criteria and no impacts would be anticipated.

The air quality assessment identified SO_2 as a critical pollutant for the project. The key sources of SO_2 in the study region are the Mt Piper and Wallerawang power stations, both of which were included in the modelling. This approach represents a cumulative assessment, since the major sources of SO_2 were including in the model scenarios. There are however, other pollutants where the number of sources are more diverse than just the emissions from the power stations. The example is particulate matter (TSP or PM_{10}) where there will be many more sources of this pollutant in the study region in addition to power stations, that is, mining, agricultural activities, construction activities, etc. For this and other pollutants it was demonstrated that the relative contribution of the project would be very small and that emissions from the project are highly unlikely to be the cause of exceedance of relevant air quality criteria at nearby locations such as Blackmans Flat.

3.2 Approvals Process – EPBC Act

3.2.1 Submissions

A few submissions indicated that an increase in CO_2 emissions was of National Environmental Significance due to potential effects on natural ecosystems such as the Great Barrier Reef and should be referred to the Commonwealth for consideration under the EPBC Act.

3.2.2 Response

The project was referred to the Commonwealth for consideration as a controlled action under the requirements of the Environment Protection and Biodiversity Conservation Act, 1999. The level of emissions of CO_2 from any proposed development is not an NES "trigger" under the Act and it was not considered by the DEWHA. The impacts of the proposal on Commonwealth listed threatened species were considered by the DEWHA and it was concluded by it that the Mt Piper Extension project is not a controlled action. A copy of the letter from DEWHA is attached in Appendix B.

3.3 Approvals Process – Part 3A

3.3.1 Submissions

A few submissions were received in response to the Part 3A Approvals Process. If an increase in electricity generating capacity is classed as "critical infrastructure" then the Part 3A process should be used to get renewable systems established rather than polluting systems.

3.3.2 Response

According to clause 24(a) of the Major Projects SEPP 2005 any system including hydro, wave, solar or wind power with a capital cost in excess of $30 million would be a Major Project and subject to the requirements of Part 3A of the EP&A Act. The Part 3A process can be used to seek approval for renewable systems.

3.4 Climate Change and Greenhouse Gas Emissions

3.4.1 Submissions

Most of the submissions received addressed this issue.

It was suggested that climate change induced by greenhouse gas emissions is a global crisis which needs urgent action and further development of coal fired power stations is not appropriate due to the levels of CO_2 which will be emitted. Many called for an immediate ban on new fossil fuelled power stations in NSW. Others sought a delay until the outcome of the CPRS is known. It was also suggested that building old technology will have an effect on impetus for new technology which will result in "zero carbon" electricity.

Some submissions indicated that construction of the power station would mean that NSW would not achieve its objectives for greenhouse gas emissions in 2025 and would be unlikely to achieve its share of the new 20 percent renewable energy target. It was also suggested that emission free alternatives to fossil fuel generators were not considered.

3.4.2 Response

Climate change is generally acknowledged as a global crisis and the Commonwealth Government's draft CPRS legislation is regarded as a mechanism by which Australia is seeking to contribute to the global response to the crisis. The proposed development (whether gas or coal) is designed to fit within the likely structure of the Carbon Pollution Reduction Scheme proposed by the Government in that any new operator will be required to acquire permits each year for carbon emissions and surrender those permits for each tonne of greenhouse gas produced in the year. Permits will only be available up to the limit or cap set by the Government. The owner / operator of a new coal or gas fired power station would be required to operate within their ability to acquire permits.

The direct impacts of a Carbon Capture and Storage (CCS) system were not assessed as part of the project, but the need for its availability was considered and it was acknowledged that any new plant would need to be CCS "ready". Approval of a coal or gas fired plant is not contingent on immediately available CCS technology but a decision would be required, when CCS is commercially available, as to whether it is a better commercial decision to install the technology and reduce the level of greenhouse emissions or to continue to purchase permits within the constraints of the trading cap.

Whether NSW achieves its targets of reduction of greenhouse gas emissions by 2025 and increases the proportion of renewable energy generation capacity is a matter for the NSW Government. The NSW Energy Reform Strategy of March 2009 noted that renewable fuels and gas are anticipated to increase their share of total generation capacity with the introduction of the Renewable Energy Target of 20% by 2020 and the CPRS, but that coal fired generators will still be expected to play a crucial role. Again, whether coal or gas (or neither) is selected at Mt Piper Extension will depend on the ability of the proponent to be able to develop and operate commercially within the framework of a CPRS.

With the move to a whole-of-nation response through the CPRS, the competitive market for permits should ensure that the most efficient economic outcome will be achieved at the national level. This may mean that some states reduce their GHG emissions less on a per capita (or gross state product) basis than others because it is a more efficient outcome over time. It can be argued that state GHG reduction targets within a national target driven by a national competitive market trading scheme would produce a less efficient economic outcome. It is at the national level that the effectiveness of the CPRS in achieving national targets will be measured.

Emission free technologies were not considered for the Mt Piper Extension site as none was considered feasible at this stage for a large, base load generating system which is required. It can also be argued that no emission free technology exists when Scope 2 and 3 accounting of CO_2 emissions is taken into account.

3.5 Ecology

3.5.1 Submission

A few of the submissions received addressed this issue. It was argued that thousands of species would be in immediate danger of extinction if we don't focus on reducing our carbon footprint.

3.5.2 Response

This can only be addressed on a national and international scale by means of the appropriate mechanisms set to limit the production of greenhouse gases. The effects on ecosystems would be governed by a global response to the management of greenhouse gas emissions. Australia is seeking to respond through its proposed CPRS legislation and the proposed development at Mt Piper Extension would be required to fit within that framework.

3.6 Economy – Employment

3.6.1 Submissions

There were a few submissions received that addressed this issue.

Approval of the project could delay the transition from coal to renewable power costing thousands of jobs.

3.6.2 Response

There was no requirement to address a comparison of technologies in terms of employment generation and overall economic benefits. In any case, it is arguable that approval of a fossil fuelled plant at Mt Piper would have any effect on the timing of development of renewable generating capacity. The intent of the CPRS is that the market would drive investment into research / development of renewable for generating capacity. It should also be noted that Government funding is being provided for research into renewable energy and CCS.

3.7 Energy

3.7.1 Submissions

Submission number 205 indicated that the EA ignores many externalities, particularly the impact on the inland river systems and energy production is a major driver of climate change.

3.7.2 Response

The EA was not required to address the effects of climate change on inland river systems. It did, however, consider the effects of water consumption by the new plant on the existing waterways. Chapter 5 of the EA identified the water requirements and indicated that the requirements would fit within the current extraction licences and other water sources available.

3.8 General Opposition to the Project

3.8.1 Submissions

Most of the submissions were generally opposed to the proposal. Of those opposed most were directed specifically at coal. A few opposed coal but supported gas.

Opposition was generally based on impacts associated with the increase in the level of greenhouse gas emissions and the effects on climate change. Support for gas was based on the need to secure future power and the effects on greenhouse gases would be less.

3.8.2 Response

This is noted. A response to the comment on increased greenhouse gas emissions is covered below.

3.9 Information Quality

3.9.1 Submissions

Many of the submissions received addressed this issue. The question raised was that the report doesn't tell us the GHG intensity of the CCGT and USC options.

3.9.2 Response

The emission intensities for USC and CCGT are shown in Appendix F of the EA.

3.10 Noise

3.10.1 Submissions

A handful of the submissions received addressed this issue.

Major concerns were expressed over the effects of coal trains through urban areas, noise from the coal unloader and noise from the dry cooling system, fans and duct work on the site.

3.10.2 Response

The Noise Impact Assessment was undertaken for the project and is described in full in Appendix D and summarised in Chapter 8 of the EA. The effects of coal trains were not considered in the EA as this was addressed in detail in the EA and Submissions Report prepared for the Western Rail Coal Unloader. The coal unloader EA indicated it would be constructed whether or not the Mt Piper Extension was constructed, and the assessment undertaken at that time included train movements with or without the proposed extension.

The noise report did consider the effects of noise from the air cooled condensers, fans and duct work on-site (as part of the operational noise from a power station) and the cumulative noise effects from the operation of the coal unloader.

3.11 Safety

3.11.1 Submission

One of the submissions received addressed this issue. It was concerned about the effects of train movements and the lack of safety barriers at rail crossings near school areas and parks.

3.11.2 Response

The effects of train movements and safety associated with safety barriers at rail crossings was not part of the study. As noted above the coal unloader would be constructed whether or not the Mt Piper Extension was constructed, and the assessment undertaken at that time included train movements with or without the proposed extension.

3.12 Social Effects

3.12.1 Submissions

Many of the submissions received addressed this issue. The main concerns were intergenerational equity (our children will inherit the mess), limited employment benefits compared with renewable alternatives and health effects due to air and water pollution.

3.12.2 Response

Social effects from the construction and operation of the extension were addressed in the EA in Chapter 14. These impacts were assessed only for the nominated project (coal or gas), and no comparative assessment was required for alternative generating technology.

Health effects due to air quality were assessed by inference in Appendix E Air Quality Assessment, in that health based air quality criteria were used as the measure of impact assessment. As it was concluded that there would be no significance increase in exceedances of these criteria, by inference there would be no increase in any health impacts associated with air quality in the locality or region.

There was no requirement to assess impacts on health from changes to water quality as no changes to water quality were predicted. Water cycle management was addressed in Chapter 5 of the EA where it states that the intention for the project is to recycle water used for process on the plant and to adopt the zero discharge policy currently in place for the existing Mt Piper Power Station. The only water discharged to creeks draining to Sydney's drinking water catchment would be storm water with systems in place to ensure any contamination of it from falling on the site would be treated before discharge. This discharge would be subject to licence conditions and monitoring identified within an Environment Protection Licence issued under the POEO Act.

3.13 Strategic justification

3.13.1 Submissions

Most of the submissions received addressed this issue.

The comments received related to:

- Limited consideration given to demand management measures and distributed generation when considering the need for a new baseload plant. Reference was made to recent studies published by UTS;
- Need for consideration of renewable alternatives such as solar, wind, geothermal and wave/tidal sources and a transition to a clean energy future;
- The commitment to renewable energy targets set by Commonwealth and State;
- Lack of commercial availability of carbon capture and storage for another 20-30 years, especially geo-sequestration;
- The use of low emission distributed (decentralised) sources and demand management will be cheaper through reduced network distribution costs;
- Inappropriate predictions used by Owen and other sources leading to prediction of need for baseload, ignoring energy efficient measures and market responses to rising prices;

- The approval for Mt Piper Extension and other "baseload" sources under consideration is much greater than requirements;
- Demand in NSW is not increasing but has, in fact, fallen. There is no need for extra generating capacity for the next decade.

3.13.2 Response

Future Generating Requirements

The National Electricity Market (NEM) provides a wholesale market for the supply of electricity to retailers and end-users in NSW, Victoria, Queensland, South Australia, Tasmania and the Australian Capital Territory. The NSW Government's *Inquiry to Electricity Supply in NSW*, also known as the Owen Inquiry, examined the future of electricity generation in NSW and provided advice to the Government on the actions necessary for a timely investment in new baseload generation.

The growth of the electrical energy use in NSW is very dependent on the growth rates forecast for the economy and the continued increase in population. The population of NSW is just under 7 million and is predicted to grow to 7.6 million by 2018 (NSW Treasury, 2008). Associated with population growth is higher economic growth which results in higher energy consumption.

Owen indicated that, assuming all generators are consistently running to maximum technical capacity factor limits, NSW generators are capable of delivering about 85,000 GWh of energy per year. The contribution of non-scheduled generators is projected to increase from 2000 to 4000 GWh per annum by 2016-17. It was acknowledged that renewable energy supplies will become increasingly important, with gas generation embedded in distribution or customer networks possibly contributing another 50 GWh per year. Owen concluded that NSW needs to be prepared for new baseload generation from 2013/2014 to meet growing demand and to avoid energy shortfalls and it was forecast in 2007 that 85,000 GWh of electrical energy would be needed in NSW by 2013/2014 under a medium growth scenario and by 2016/2017 under a low growth one.

The 2009 Electricity Statement of Opportunities (ESOO) published by the Australian Energy Market Operator (AEMO) indicates that additional capacity of 182 MW is required in NSW in 2015/16 based on its demand/supply forecasts. This is the first year that the LRC[4] indicates a reserve deficit[5] as indicated in Figure 2.3 of the ESOO (see Figure 3-1**)** showing the NSW summer supply-demand

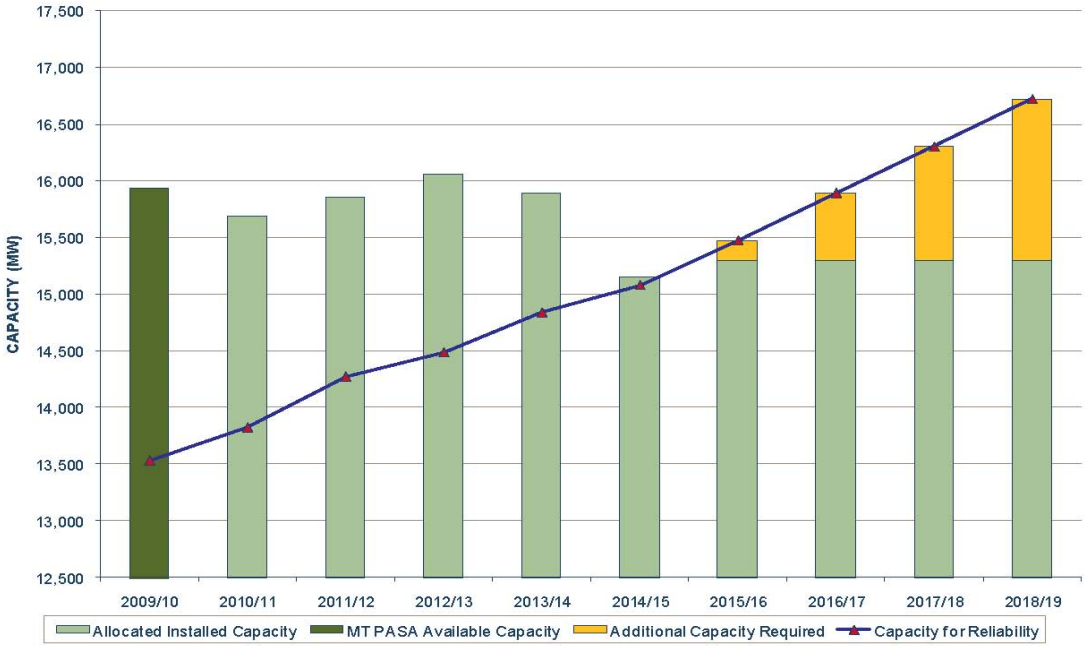
[4] LRC stands for "Low Reserve Condition" which occurs "when AEMO considers that a region's reserve margin (calculated under 10% probability of exceedance (POE) scheduled and semi-scheduled maximum demand (MD) conditions) for the period being assessed is below the minimum reserve level (MRL)". See page 9 of Glossary of 2009 ESOO.

[5] Reserve deficit means "The amount by which a region's reserve margin falls below its (specified) minimum reserve level (MRL)". See page 16 of Glossary of 2009 ESOO

outlook. As can be seen the reserve deficit increases to about 625 MW in 2016/17 and about 1,050 MW in 2017/18.

The first LRC point occurs one year later than that reported in the 2008 ESOO. As indicated in the ESOO, TransGrid provided the annual energy forecasts for NSW which are consistent with those in its APR. The forecasts also take into account demand management and energy efficiency measures as well as an expansion of renewable generation. According to the 2009 ESOO, TransGrid advised that the difference between the projections was due, among other things to "a severe worsening in the economic outlook, resulting in lower forecast economic activity throughout the forecast period". AEMO advises that "The different economic scenarios and resulting energy projections demonstrate that higher economic growth causes higher energy consumption. As a result, it is prudent to consider economic forecasts underpinning the projections when investigating their applicability, particularly the more recent projections of Federal Government GDP and New South Wales Government GSP".

Figure 2.3 New South Wales Summer Supply-Demand Outlook



- **Figure 3-1 NSW Summer Demand Outlook (from ESOO 2009)**

These words of caution by AEMO are particularly relevant given the long lead times in developing new base load generation. For example, given the recent upturn in the Australian economy and indications that the world is emerging from the global financial crisis, it could be postulated that

electricity projections could return to levels indicated in the 2008 ESOO. This could advance the need for new base load generation.

Notwithstanding such an improvement in economic activity, as indicated above, the 2009 ESOO shows the need for new generation capacity over the next five to seven years[6] and beyond. This is about the lead time for new base load generation given:

- One to two years lead time to complete the sale of the Mt Piper Extension development site and for the new owner to arrange the necessary finance, prepare the specifications, obtain the necessary approvals, and call tenders and award contracts for the design, manufacturing and construction of the power station.
- Four and a half to five years for the construction and commissioning of coal-fired plant (if this option was chosen).

The NEM facilitates flow of power from States with spare capacity to those that need more capacity. According to the Owen Inquiry, during peak periods demand exceeds the State's domestic supply. To meet this peak demand, NSW is required to gain access to electricity from other interconnected regions in the NEM. In 2006-07, interregional supplies from the Snowy Region and Queensland contributed approximately 9,000 GWh to NSW, which is over 10 per cent of NSW needs. Reserve capacity support from the Snowy region and Queensland can provide additional available capacity from 2006/07 until 2009/10. Beyond 2010/11 it is possible that NSW will not be in a position to obtain additional capacity from the Queensland or the Snowy region as Queensland, Victoria and South Australia may be experiencing deficits.

Renewable Energy Targets

Renewable energy consumption in NSW has been maintained at about 6% of the overall electricity consumption. In order to increase the amount of renewable electricity consumed the NSW Government established a target of 15% renewable energy consumption by 2020 and the Commonwealth has recently legislated for the national scheme which will provide incentives for renewable energy generation (Renewable Energy Target - RET) of 20% by 2020 and is proposing the implementation of the Carbon Pollution Reduction Scheme (CPRS). The NSW Energy Reform Strategy of March 2009 noted that renewable fuels and gas are anticipated to increase their share of total generation capacity with the introduction of the RET and the CPRS but that coal fired generators will still be expected to play a crucial role in both the NEM and in NSW.

Measures to support renewable energy generation resulting in reductions in emissions include the introduction of technologically efficient baseload generation which, when driven by a market based

[6] Counting from the end of 2009, start of 2010.

approach to the price of carbon, will allow the easing out of less efficient, older baseload technologies. In particular, the NSW Energy Reform Strategy of March 2009 was designed to support the development of facilities to increase baseload power generation, and with that the prospect of carbon pollution pricing will make gas an increasingly attractive fuel source for future baseload generation.

Demand Management and Distributed Generation

It was argued in a paper by UTS[7] that current projections for energy consumption and generation differ from those outlined in the Owen Inquiry and that timing of energy shortfalls would be significantly different. It was claimed that by implementing energy efficient measures, development of cogeneration, availability of the Snowy Scheme output could mean an energy surplus in 2019/2020 rather than a shortfall.

The UTS paper used scenario planning techniques, postulating take-up of distributed energy opportunities (energy efficiency, demand management and cogeneration) given appropriate government policy. Should such opportunities be realised as a result of government policy, the effect on the need for new base-load generation will be determined in the competitive energy market place. At this time, the forecasts of the 2009 ESOO indicate the need for additional base load capacity as indicated above and is to that forecast shortfall that the project is responding. As with all projects, especially long lead projects, part of the project risk is that the demand may be deferred or may occur earlier than forecast.

The future of Carbon Capture and Storage

Research into carbon capture and storage is on-going but it is clear that its successful implementation is some time away. The trigger point for the implementation of carbon capture and storage will be when the technology is technically proven and the cost of implementing CCS reduces to less than the cost of carbon emissions under an operating carbon trading scheme.

Although CCS technology is not currently economically feasible, a key element of managing CO_2 emissions would be the implementation of a process to periodically review technologies and their viability in order to appropriately plan for their eventual implementation at the proposed Mt Piper Power Station Extension. This review process would incorporate potential trigger points for implementation of CCS in the context of the CPRS.

[7] Rutovitz and Dunstan 2009. Meeting NSW Electricity Needs in a Carbon Constrained World. UTS 2009.

3.14 Sustainability

3.14.1 Submission

Many of the submissions discussed sustainability. It was argued that the proposal is at odds with the principles of ESD.

3.14.2 Response

The principles of ESD were addressed in detail in the EA in Chapter 15. The assessment of ESD was centred on impacts associated with air, noise, water and biodiversity. The question of the sustainability in the context of greenhouse gas levels in the atmosphere needs to be considered in the context of Government policy in reducing and stabilising green house gas levels in the atmosphere.

3.15 Transport

3.15.1 Submissions

A handful of the submissions received addressed this issue.

Coal trains and extra truck movements were of concern, especially in and around Portland.

3.15.2 Response

As stated in earlier responses, coal trains travelling to and from the planned rail coal unloader were addressed in detail in the approval documentation for the construction and operation of this coal unloader and were not required to be considered as part of this application.

Consideration was given to truck movements in Chapter 14 of the EA. More detailed assessment will be required during the Project Application stage when further information is likely to be available on the technology to be adopted, equipment types and sizes and frequency and direction of truck movements. It is also necessary to prepare a construction Traffic Management Plan which will provide the framework by which truck movement will be managed and monitored.

3.16 Visual Effects

3.16.1 Submission

One submission addressed this issue on the basis of ugly mining landscapes.

3.16.2 Response

Ugly mining landscapes relate to active or disused coal mines in the area and would need to be addressed by the mine owners. One proposal (see next response) is that the void resulting from open cut mines in Lamberts Gully would be utilised practically by placement and storage of coal ash and rehabilitated.

3.17 Waste Disposal

3.17.1 Submissions

A few of the submissions addressed this issue. Concern was raised over buffer distances to the townships of Blackmans Flat and Lidsdale, especially from the existing and possible future ash placement areas.

3.17.2 Response

A separate assessment is being undertaken by Delta to identify and secure ash storage areas for the future for the existing Mt Piper Power Station and for the proposed Mt Piper Extension. An application has been lodged with Department of Planning for the consideration of ash storage at a number of sites in the vicinity of the existing Mt Piper Power Station that would be used by the existing power station and the proposed Mt Piper Extension.

Several options exist for the placement of ash from the coal fired plant option, including:

- Stage 1 ash storage area – currently used by existing Mt Piper Power Station and would be filled by the time the new power station was operational;
- Stage 2 ash storage area – adjacent to Stage 1 but yet to be developed, extending into coal mining areas known as Lamberts Gully. These areas are about 750m from Blackmans Flat and as they are being mined at present they would be available for ash placement within the time frame of the proposed coal fired plant;
- Potential ash storage areas around Neubecks Creek (about 1.5 km from Blackmans Flat) and to the south west of the existing plant (about 2km from Portland). These areas could be used in the longer term, subject to a decision and approval for them to be mined;
- A substantial increase in the amount of ash that can be reused. The existing plant sells up to 15-20% of the ash produced. The assessment for the new ash storage areas would examine further options for reuse.

This separate application will address the issue of management of the ash at the site.

3.18 Water

3.18.1 Submissions

A handful of the submissions were concerned with water consumption and water pollution.

Concerns related to the:

- Stated requirement of reliance of water from the existing water supply schemes and from mine water extraction on the Newnes Plateau. It was suggested that there is insufficient water available from these sources, especially when other demands exist and drought conditions persist;

- That the current water extraction (at the limit of the existing water licences) plus the water required for the new plant would result in the consumption of over 32,000 ML/yr. In addition, water requirements for a CCS plant would increase the requirement by a further 10.6 ML/yr;
- Global warming will reduce rainfall and hence water availability by 20 per cent;
- Stated "zero discharge" policy yet Delta has been prosecuted for discharges to Neubecks Creek;
- Existing pollution levels (especially salt, metals) are due to the operations of Wallerawang PS and the existing Mt Piper PS and Kerosene Vale Fly-ash storages and the coal mines which supply the power stations. Coal fired power stations use and pollute large volumes of water. Concern was also expressed over the disposal of brine water.

3.18.2 Response

Water Consumption

As described in Chapter 5 of the EA, water supply to the Wallerawang and Mt Piper Power Stations is from two separate catchment areas, coastal (Coxs River) and central west (Fish River). The Coxs River system is a tributary of the Nepean River, while the Fish River is part of a central western catchment system and is a north westward flowing tributary of the Macquarie River.

Mt Piper and Wallerawang Power Stations obtain their water supplies from the Fish River and Coxs River Water Supply Schemes. Delta is entitled to extract up to 23,000 ML/yr from the Coxs River Scheme under the terms of its Water Management Licence (WML 00002) issued by State Water. The Fish River allocation is a maximum of 8,184 ML/year under the Fish River Water Supply Agreement (Agreement Concerning the Supply of Water from the Fish River Water Supply Scheme – State Water Corporation, 2008) but this allocation is reduced during drought conditions, in accordance with the Fish River Water Supply Operating Rules. As at August 2009 Delta's allocation is reduced to 40% (3,274 ML) of the total maximum available under the agreement. Delta also has access to water from the Duckmaloi River Diversion. The quantity of water supplied from the diversion is related to the available river flow at the Duckmaloi Weir.

An agreement between Delta Electricity and Springvale Coal in 2006 makes provision for mine water to be transferred from the Springvale/Angus Place underground mine complex to Wallerawang pipeline via a water transfer scheme. This system has a design capacity of 30ML per day and has averaged a transfer rate of about 15 ML per day since commissioning, subject to its availability and mining operations. In 2007/2008 the scheme supplied 4,485 ML. The scheme reduces the uptake of water from the Coxs River by Wallerawang Power Station therefore increasing the amount of water available for uptake by Mt Piper Power Station by approximately 15ML a day.

The supply processes are interlinked, as follows:

- The Coxs River drains east and south to the Hawkesbury Nepean system. There are two storages along the river – Lake Wallace which has an active capacity of 3,230 ML and, further downstream, Lake Lyell which has an active capacity of about 31,450 ML;
- Mt Piper is supplied from Lake Lyell directly and when sufficient flow is available via a pumping system to a storage on Thompsons Creek. The Thompsons Creek Dam has an active capacity of up to 27,500 ML, and supplies Mt Piper Power Station by gravity feed;
- Wallerawang Power Station is supplied directly from Lake Wallace which is augmented by refilling from Lake Lyell when required;
- The Fish River supplies both Wallerawang and Mt Piper Power Stations, with most flow going to Wallerawang. The pipeline off-take to Mt Piper Power Station is near Portland.

The annual average water use for Mt Piper is 14,150ML and for Wallerawang is 8,750ML and the total annual average water requirements for the both stations is therefore about 23,000ML. That volume of water is provided through existing licensing to extract water from waterways and agreements to use mine water from available sources within the area.

Water available under licences and agreements is about 34,000 ML/yr and comprises the Coxs River scheme (23,000 ML/yr), the Fish River scheme (8,184 ML/yr) and mine water (recently using 4,485 ML/yr), but is currently reduced to about 30,000 ML/yr due to the current reduction to 3,274 ML/yr from the Fish River.

The volume of raw water required for the proposed extension would comprise: 1016 ML/yr (coal option) or 460 ML/yr (gas option). Clearly the volume of water required for the proposed extension fits well within the existing availability of water from the various sources. No changes to the existing Water Management Licence or other agreements would be required to provide water for the proposed extension.

The storage systems on Coxs River (Lake Wallace, Thompsons Creek Dam and Lake Lyell) have a combined storage capacity of 61,180ML and it was estimated that during drought conditions the storages would provide water for up to 5 years. Thus, the addition of an air cooled power plant using about 1,000ML of water from Coxs River system would not impact significantly on the long-term viability of the existing stations. No additional allocation is required and there would be no impact on minimum base flows or other water users on Coxs River. This does not mean that additional water could not be sourced from other mines or through future water trading schemes.

Water Pollution

Water quality is managed on the existing Mt Piper site by a series of treatment processes which allow it to be reused in the operation of the plant. These treatment processes ensure the maintenance of the

"zero discharge" policy for wastewater and only clean stormwater is discharged to Neubecks Creek under the provisions of EPL 13007.

Where augmentation of the treatment processes is required due to the increased volume of wastewater for treatment, this will be done as part of the construction of the proposed extension. These treatment processes ensure the maintenance of the "zero discharge" policy for wastewater, and only clean stormwater is discharged to Neubecks Creek, under the provisions of the EPL 13007. Similar arrangements would apply for the Mt Piper Extension, with a separate licence and discharge point to Neubecks Creek for surface run-off not collected and reused.

Similar water treatment processes will be installed for the Mt Piper Extension as necessary in accordance with a "zero discharge" policy. Similar arrangements would also apply to stormwater for the Mt Piper Extension, with a separate licence and discharge point to Neubecks Creek for surface run-off not collected and reused.

The use of water recycling and site management processes for Mt Piper Extension would ensure that there should be no change in water quality in receiving waters (surface or ground water) compared with existing operations. As the stormwater to be discharged would be clean and discharge point for clean surface waters is in the upper part of the sub-catchment, there would be no cumulative effect on Neubecks Creek from this. The runoff via groundwater to Neubecks Creek in the area of the proposed ash storage would be fully assessed in the separate application for the extension to the ash placement areas. The maintenance of the same level of control should, however, ensure that cumulative effects would be able to be managed.

Groundwater quality beneath the proposed new plant appears to be influenced by mine water moving down gradient from nearby abandoned workings. Observations of rust-staining in drains near the present gate house suggest that this water is acid and iron-charged, although it is noted that groundwater in the floor of a concrete-lined canal beside the main power station entry road is clear.

As described in the EA ash from the existing plant is located in an ash placement area to the east of the plant. Monitoring of boreholes is undertaken in the ash area to determine groundwater quality concluded that concentrations were generally consistent with guidelines, although elevated trace element and sulphate concentrations are an effect of the underground mine water quality.

Regardless of whether the coal or gas option is selected for the project, Delta is seeking to extend the area available for ash placement (and consequently the area for brine disposal). The extension to ash placement areas is being addressed in a separate planning application and the processes proposed will be described fully in that application. For the purposes of this assessment, it is reasonable to indicate that the design and application of water management controls would be similar to those already in operation for the existing plant.

3.19 Heritage – Cultural

3.19.1 Submission

One submission was received directly related to heritage aspects of the EA.

The main issues raised were:

- The Wiradjuir people are the traditional owners and they should be involved in all aspects that affect their land;
- Insufficient time was provided to review the methodology for the study and the methodology was regarded as unacceptable;
- Exclusion from site inspection and the need for payment for involvement in cultural heritage matters;
- A meeting of Aboriginal stakeholders should be convened to discuss the project.

3.19.2 Response

Letters were sent to DECCW, Bathurst Local Aboriginal Land Council, Lithgow City Council, the Office of the Registrar Aboriginal Land Rights Act 1983 and the NSW Native Title Services on 27 July 2009 with a closing date of 7 August 2009. Any responses received after the date were included in the consultation process. A newspaper advertisement was placed in *The Lithgow Mercury* on 18 July 2009 with a closing date of 28 July 2008. Any responses received after this date were included in the consultation process.

Responses to the public notice and letters were received from:

- Bathurst Local Aboriginal Land Council (BLALC);
- NSW DECCW;
- Lithgow City Council; and
- The Office of the Registrar Aboriginal Land Rights Act 1983.

A methodology and an invitation to provide a written report providing their views and assessment of the Aboriginal cultural values of the study area were sent to Bathurst LALC for comment on 3rd August 2009, with a reply date for comment of 24th August 2009. The methodology was not sent to DECCW, Lithgow City Council or the Office of the Registrar as they were contacted initially to obtain information on appropriate indigenous persons or groups to contact.

The DECCW provided a list of known Aboriginal parties that the DECCW felt were likely to have an interest in the project. A letter was sent to each group on 12th August 2009, with a closing date of the 20th August, 2009, asking if they had an interest in the project. Any responses received after the date were included in the consultation process.

Responses were received from 12 individuals or Aboriginal groups. The project methodology and an invitation to provide a written report providing views and assessment of the Aboriginal cultural values of the study area was sent to each of the second list of groups on 20th August 2009 and 10th September 2009 with a reply date of 10th September 2009 and 24th September 2009.

One comment was received on the methodology. This was not sent directly but was forwarded to the project from the DECCW. No further comments on the methodology have been received from any of the registered stakeholders to date.

It was decided by the proponent not to invite Aboriginal representatives to the field survey of the study area as provided in the methodology sent to each registered group. All registered groups have been involved in the project and have been given the opportunity to provide input into the project methodology; all registered groups will be provided the opportunity to review the report for the project.

The Aboriginal stakeholders were not invited to participate in the field survey of the study area due to safety considerations and, in particular, the highly disturbed nature of the site. If Aboriginal archaeological sites were identified within the study area then representatives from the Aboriginal community were to be invited to inspect the area. These issues and the approach to be taken were outlined in the methodology sent to each registered group. Only one response was received on the methodology so it was assumed that the remaining stakeholder groups/individuals agreed with this approach. No sites were identified in the area.

4. Statement of Commitments

4.1 Introduction

The environmental impacts of the proposal were assessed in the Environmental Assessment (EA) and measures to manage those impacts were outlined and incorporated into the Statement of Commitments. These mitigation measures, along with any conditions of approval issued by the Minister for Planning, would be incorporated into the detailed design, as well as where appropriate, the preparation of construction and operational Environmental Management Plans (EMPs) for the project.

Following consideration of the submissions made to the Environmental Assessment Delta does not propose any changes to the concept for the proposed design, construction or operation of the Mt Piper Extension. No changes were requested to the Statement of Commitments and none is proposed, although they may be further developed by the proponent during the Project Approval stage.

The commitments provided in the EA are outlined in the following sections.

4.2 Construction Environmental Management and Mitigation

Environmental management commitments proposed for implementation during the construction phase are shown in Table 4-1 below. These commitments will be developed during the project application and detailed design and will be included in the construction EMP (CEMP) which would be required prior to any construction activities commencing. The CEMP would detail operating conditions and temporary environmental protection measures to mitigate the impact of construction activities. Other commitments may form part of the terms of contract with the companies or consortium responsible for the project construction, or may be further assessed at the detailed design stage.

Table 4-1 Environmental Management Commitments - Construction

Objective	Action
Environmental Management	
Manage hours of construction work	Proposed hours of construction are 7.00am – 6.00pm Monday to Friday, 8:00am – 1:00pm Saturday, with no work on Sundays or public holidays. The construction EMP will outline protocols for notifying relevant authorities and local residents prior to any works occurring out of normal construction hours. Out of hours work will be required under certain circumstances e.g. to minimise impacts on active operational services (e.g. connection to live sewer, water and electrical services), to minimise impacts on existing traffic, to respond to emergencies, and unavoidable construction constraints (e.g. long concrete pours).
Minimise impact of construction on surrounding area	A Construction Environmental Management Plan (CEMP) would be prepared and implemented to guide construction activities as outlined below in the following commitments: ■ Air Quality ■ Water Quality ■ Noise & Vibration ■ Heritage

Objective	Action
	■ Flora & Fauna ■ Visual and landscape ■ Waste Management ■ Traffic and transport ■ Communication. All plans and strategies would be developed as part of the CEMP, in consultation with the relevant agencies.
Traffic and Transport	
Minimise impact of construction activities on surrounding road network	A Construction Traffic Management Plan (CTMP) would be prepared and implemented to: ■ Restrict heavy construction traffic to designated arterial routes using the mechanism of construction contracts; ■ Establish consultation procedures with the RTA and Lithgow Council for any proposed off site works. Where possible, shifts would be staggered to minimise the traffic impacts associated with employee movements to and from the site.
Air Quality	
Minimise dust generation during construction	Develop and implement a Dust Management Plan (DMP) as part of the Construction EMP. The DMP would include the following mitigation measures and controls: ■ Undertake regular watering of active work areas, including stockpiles and loads of soil being transported, to reduce wind blown dust emissions; ■ Minimise the area of disturbed / exposed land at any one time; ■ Revegetate stockpiles or progressively landscape exposed areas and where material is to remain in situ for a long period of time.
Water Quality	
No increased sedimentation of nearby waterways	A Soil and Water Management Plan (SWMP) will be prepared and implemented to reduce the potential water quality impacts from the site during construction. General measures to control erosion of soil and sedimentation would be implemented prior to construction works. These measures would be prepared in accordance with the principles and practices in *Soils and Construction* (Landcom, 2004) and would be maintained and monitored during the construction phase.
Identification and management of any contaminated fill and the potential for groundwater impacts	A contaminated land assessment would be undertaken as part of the geotechnical assessment which would be required during detailed design. The assessment would follow the NSW EPA (1997) *Guidelines for Consultants Reporting on Contaminated Sites* and would recommend procedures for remediation of any contaminated material.
Noise and Vibration	
Minimise construction noise impact on residences	An Environmental Noise Management Plan (ENMP) would be prepared and implemented prior to the commencement of works to achieve compliance with DECCW criteria. This Plan would include: ■ Application of physical noise controls to construction equipment, equipment maintenance and utilising “best practice” technology to achieve low levels of construction noise emissions; ■ Noise compliance monitoring for all major equipment and activities on site;

Objective	Action
	■ The planning of noisy activities for parts of the day when they would have the least impact; ■ Communication between the community and the construction management to be provided at the start of the works and maintained during the works; ■ Investigative monitoring of noise in response to specific complaints.
Heritage	
Protection of Indigenous Heritage relics if uncovered	In the unlikely event that artefacts of indigenous heritage significance are uncovered during the course of construction, works in the immediate area would cease, DECCW would be notified and expert advice would be sought from an appropriately qualified professional.
Flora and Fauna	
Minimise likelihood of direct impacts to threatened species	*Eucalyptus cannonii* and other species to be protected on-site will be tagged and all efforts made to avoid damage during construction.
Landscape and Visual	
Improve and manage landscaping	A Landscape Management Plan (LMP) will be prepared during detailed design of the project and implemented during and after the construction period. The plan would include: ■ processes for the management of on-site weeds; ■ detail on the rehabilitation of the site with a program of weed removal and revegetation with native species. Noxious weeds at the site would be identified and be removed in accordance to the criteria under the *Noxious Weeds Act 1993*, and the relevant NSW Department of Primary Industries weed control guidelines; ■ Monitoring of vegetation to ensure it becomes established and to identify any further management requirements.
Waste Management	
Minimise waste generated and maximise re-use and recycling. Waste disposal to be undertaken when re-use and recycle is not possible	A Waste Management Plan (WMP) would be prepared and implemented. This would include: ■ Measures to minimise waste including the use of clean excavated material as fill for site levelling and road works, the re-use of excavated material not suitable for construction purposes for landscaping where practicable, and any contaminated soils to be remediated and used on site where appropriate. ■ Investigate the use of recycled materials in concrete, road base, asphalt and other construction materials; ■ Waste for disposal would be removed by a licensed waste contractor and disposed of at a licensed landfill facility; and ■ Quantities of waste produced/reuse/recycled and location of final disposal to be monitored.
Communication	
Establish effective communication with community and relevant agencies	A Construction Communications Plan would be prepared and implemented. This would include: ■ Maintenance of phone line/email/website to provide opportunity for community input; ■ An effective complaints handling procedure to address and respond to issues raised by the community, including investigative monitoring of construction traffic in response to specific complaints.

4.3 Operational Environmental Management and Mitigation

Mitigation and other environmental management measures relevant to the operational phase of the project are provided in Table 4-2. These include the preparation of a site Operational Environmental Management Plan (OEMP) which would be required prior to operations commencing. The OEMP would detail on-going operating conditions and protection measures to mitigate the impact of site operations. Relevant measures would be detailed, as appropriate, in the relevant OEMP to be prepared by site tenants or lessees.

The OEMP would be updated as required to reflect any changes in the operation of the site or regulatory requirements.

Table 4-2 Environmental Management Commitments – Operational

Objective	Action
Environmental Management	
Minimise impact of operations on surrounding area	An Operational Environmental Management Plan (OEMP) would be prepared and implemented to guide operational activities. It would include: ■ Air quality ■ Chemicals storage and handling ■ Water Quality ■ Noise & Vibration ■ Waste Management ■ Energy and Greenhouse ■ Emergency Response ■ Community Liaison ■ Environmental Reporting All plans and strategies would be developed in consultation with the relevant agencies. The proponent would undertake a sustainability assessment of the operational aspects of the site to determine and develop appropriate strategies to minimise environmental impacts. These would be outlined in the OEMP.
General	The OEMP would provide for regular monitoring and periodic performance reviews of the key performance criteria for air, noise, water management and traffic established for the operation of the power station. Air, noise and water management performance parameters would be established in the EPL for the site and be described in OEMP. The examination and interpretation of results will be undertaken by a suitably qualified professional and any agreed actions implemented within a reasonable timeframe as defined in the OEMP.
Air Quality	
Minimise emissions from plant and equipment	Equipment to be maintained to ensure environmental performance in terms of air emissions meets licence requirements.
Confirm predictions from air modelling	Monitoring at sites at Wallerawang and Blackmans Flat will continue to allow the demonstration of the conservative assumptions used in the modelling studies.
Chemicals Storage & Handling	
Minimise risk of future contamination	Operations to be managed to ensure potentially contaminating materials are stored and handled in an appropriate manner to minimise future contamination risk to soils and groundwater.

SINCLAIR KNIGHT MERZ

Objective	Action
Minimise risk of on site incidents	The site operator will be required to prepare and implement operating procedures for the management of dangerous goods.
Hydrology and Water Quality	
Manage water quality runoff to waterways	The key operational water quality measure and environmental safeguard would be the capture, treatment and reuse of the process water and contaminated water. This will be contained and treated in the wastewater treatment system. Treated water will be reused except for brine concentrate (coal option) which will be used in the ash storage area. Clean runoff water will be diverted via the drainage system to water quality management devices on site to be monitored prior to discharge. Any devices installed will be maintained at regular intervals to ensure they are functioning as expected.
Noise and Vibration	
Minimise operational noise impact on surrounding residences	An Environmental Noise Management Plan (ENMP) would be prepared and implemented and would detail methods available to mitigate noise during the operation of the proposal. More detailed noise monitoring and modelling will be undertaken during design to assist in developing appropriate mitigation measures to ensure noise criteria can be met. Monitoring will be undertaken following commencement of operation to ensure modelling predictions are achieved. Investigative monitoring of noise will be undertaken in response to specific complaints. Appropriate complaints procedures and means of responding to complaints will be established.
Waste Management	
Minimise the generation of waste and maximise reuse of waste generated	Ensure that initiatives for the sustainable management of waste are given due consideration. Such measures would include reduction of materials being brought onto the site, reuse of wastes where practicable and recycling. Wastewater will be recycled through the power plant and brine concentrate (for the coal option) would be used for ash conditioning. Ash (from the coal option) will be placed in the proposed new ash deposition areas (subject to separate approval).
Energy & Greenhouse	
Reduce energy consumption and greenhouse gas generation	Identify opportunities to minimise energy consumption on site. Energy management measures would be assessed during detail design and would be consistent with relevant industry guidelines. Evaluation of availability and feasibility of measures to reduce and/or offset greenhouse emissions (including the use of carbon capture and storage) will be undertaken. Options for staged implementation of emerging mitigation technologies will be identified at key stages in the development of that technology.
Emergency Response	
Ensure emergency response procedures are adequate	An Emergency Response and Incident Management Plan (ERIMP) would be prepared to ensure incidents are handled promptly and safely. The ERIMP would outline the appropriate emergency response equipment that would be provided, the mandatory training requirements, the emergency response procedure and the responsibilities of site operators.
Community Liaison	
Establish effective	Liaise with the community about the operation of the proposed extension via the

Objective	Action
communication with community	existing community relations program eg. articles in the local newspapers, forums and meetings with stakeholder groups. Provide avenues for community feedback.
Environmental Reporting	
Provide clear and appropriate communication about site operations	During operation, environmental performance and progress will be incorporated as necessary into the respective corporate environmental reporting of Delta Electricity and the site operators. The reports would ensure relevant authorities have access to important environmental information relating to the new facility. Any shortcomings in environmental performance identified by the reporting process would be addressed by updating the EMPs.

Appendix A Government Submissions

.

Submission number	Issue	Submission details	Response
144	Air quality	For Blackmans Flat residents this will mean 45% more NOx, SOx, PAH, particulate matter and other air emissions daily. The EA only identified N02 and S02 as having potential to cause DECC exceedances, but concluded that the impact would be minimal. It will not be minimal for the resident of Blackmans Flat. The Executive Summary, page 8, paragraph 4, states quite clearly about N02 and S02 emission levels that "the highest levels would be close to the plant (that is, within 2 km)." The residents of Blackmans Flat live within 2km and downwind, of Mt Piper Power Station. In addition this area regularly experiences Temperature Inversions, which trap and concentrate air pollutants like N02, S02, flyash dust and particulates at ground level. In addition we cop the air emissions from Wallerawang Power Station. The EA failed to identify that average sulphur dioxide emissions from Mt Piper and Wallerawang power stations are already higher than those of the Central Coast power stations because of the higher sulphur content of coal from the Western coalfields. The EA fails to state that Wailerawang and Mount Piper Power Station NOx emission limits of 2500mg/m3 already exceed EEC and World Bank guidelines of 750mg/m3 and 650mg/m3 respectively, because they were built before 1997, Plants built or approved after 1997 are supposed to have an 800mg/m3 limit. The EA failed to identify the 2002 NSW EPA report Ambient Air Quality Research Project (199672001) which showed that Polycyclic Aromatic Hydrocarbon (PAH) concentrations in the Lithgow area were 2 to 3 times higher in summer, and 8 to 35 times higher in winter than other Great Dividing Range towns including Armidale, Cooma, Orange and Tumut. The report guessed this may be due to smoke from domestic solid fuel heaters. Cold areas like Armidale, Cooma, Orange and Tumut also use these heaters, but don?t have 2 coal-fired power stations. The EA says on page 2-9 that the most likely next option for fly-ash disposal is old mining areas of Lamberts Gully, These areas are within 1km of, and south-west of (the predominant wind direction), Blackmans Flat. Proper management of dust emissions from fly-ash dumps at both Kerosene Vale and Mt Piper have been a major ongoing problem for a long time. The DoP failed to provide adequate separation distances in approving the Expansion of Kerosene Vale Fly Ash Repository in late 2009, and the Extension of Mt Piper Ash and Brine Disposal in 2008. I'm sure that corruption will prevail and you will ignore it for the next ash dump as well. For Blackmans Flat residents this will mean 45% more fly-ash generated, and having to be safely disposed of at almost double the existing daily rate. This proposal will almost double the amount of fly-ash produced, and almost double the rate at which it will need to be safely disposed of on a daily basis. This is an enormous task that no company has tried before so close to people's homes. Delta has never shown any care for the health or amenity of its nearest neighbours. They only began to superficially address this fly-ash dust issue after being fined this year $45,000 plus $35,000 court costs in the Land and Environment Court for dust pollution at Kerosene Vale in September 2007. Delta should have been fined many times over for the dust that has blown ail over the Blackmans Fiat community from Mt Piper Ash Repository, But the EPA is just as corrupt as the DoP, If the NSW Government sells this proposal to a new owner we will have to start all over again with a company that may not have the will or resources to adequately address this issue, It should be addressed now - at the Planning stage. The EA failed to identify the large quantity of visual particulates (flyash) regularly emanating from Walierawang power station smoke stacks. Anyone driving west into the afternoon sun along the Great Western Highway or Castlereagh Highways can see this ugly pall as	3.1

Submission number	Issue	Submission details	Response
		they cross Tunnel Hill. The dust from Kerosene Vale and Mt Piper flyash dumps, and the open-cut coal mines near Mt Piper add to this pall. This particulate matter pollution must have an impact on the long term health of local residents. The technology exists to address the problem, But Delta does not care about people's health, and sticks to its antiquated licence limits, which for Wallerawang Unit 7 are pre-1972 limits, and for Unit 8 are pre-1997 limits. The EA failed to identify that average sulfur dioxide emissions from Mt Piper and Wallerawang power stations are already higher than those of the Central Coast power stations due to the higher sulfur content of coal from the Western coalfields. The EA fails to identify that NOx emission limits of 2500mg/m3 for Wallerawang and Mount Piper Power Station already exceed the EEC and World Bank guideline values of 7S0mg/m3 and 650mg/m3 respectively. This is because they were built before 1997. Plants approved after 1997 must have an 800mg/m3 limit. The EA failed to identify a 2001 EPA air quality study which identified that Polycyclic Aromatic Hydrocarbon (PAH) concentrations in Lithgow were 2 to 3 times higher in summer, and 8 to 35 times higher in winter than other Great Dividing Range towns of Armidale, Cooma, Orange and Tumut. The report guessed that this may be due domestic solid fuel heaters. Those other centres also use solid fuel heaters, but don't have 2 coal-fired power stations. The EPA concluded that Lithgow's PAH concentrations are elevated, and ongoing action is required to reduce those emissions. How will almost doubling the emissions from an expanded Mt Piper achieve this. The EA failed to identify the large quantity of visual particulates (flyash) regularly emanating from Wallerawang power station smoke stacks, perhaps due to lower quality of flue gas cleaning equipment installed. Anyone driving west into the afternoon sun can see this ugly pall as they cross Tunnel Hill. Dust from Kerosene Vale and Mt Piper fly-ash dumps, and open-cut coal mines near Mt Piper add to this pall. This particulate pollution must have an impact on the long term health of local residents. The technology exists to address the problem, but Delta does not care and adheres to existing limits, which for Wallerawang Unit 7 are pre 1972 limits, and for Unit 8 are pre-1997 limits. This proposal will almost double the amount of fly-ash produced, and almost double the rate at which this it will need to be safely disposed of on a daily basis. This is an enormous task. Adequate management of dust emissions from fly-ash dumps at both Kerosene Vale and Mt Piper have been a major ongoing environmental issue for a long time. Delta only began to address this issue after being prosecuted $45,000 plus $35,000 court costs in the Land & Environment Court last year for dust pollution at the KVAR in September 2007. But there is still a long way to go before the fly-ash dust is adequately addressed. Disposing of nearly 2 million tonnes of ash a year is a huge job, no one has done it in such close proximity to a residential Village before, I seriously doubt they will achieve this without ruining our health and lives further, or that a new owner/operator of an expanded Mt Piper will have the will or resources to do so. Adequate separation distances and buffer zones are the only solution. But the Department of Planning failed to address this in approving the Expansion of Kerosene Vale Fly Ash Repository in late 2009, and the Extension of Mt Piper Ash and Brine Disposal in 2008. Corruption will no doubt rule, and you will fail us again. The West Australia EPA has generic buffer (separation) distances as part of its Industrial Buffer Policy. For Electric Power Generation based on impacts of Gaseous Emissions (NOx, SOx), Noise, and Dust the recommended buffer distance to sensitive land uses is 3000 - 5000 metres. This proposal is just 2000 metres and the Fly-ash Repository just 1000m from sensitive land use in Blackmans Flat. Winter conditions reduce mixing in the atmosphere due to stronger and more frequent temperature inversions. This is often compounded by still conditions. As a result, air pollutants are trapped in a shallow layer at ground level and concentrated.	

Submission number	Issue	Submission details	Response
		Similar fine dust and diesel particulate matter (PM 2.5) impacts are caused by the open-cut coal mines in particular, which will supply coal to this proposal, and from coal trucks and coal trains that will transport 7 million+ tonnes of coal per year to fuel this proposal. An almost doubling of air emissions in these areas by expanding Mt Piper by 2000 MW will also double the long term health risks for local residents in Blackmans Flat.	
196	Air Quality - Local	Expected that the dust from the coal trains could be a significant source of air pollution. The major concern relates to the associated health issues may cause for local residents and visitors.	3.1
27 & 38	Air Quality – Local	Previously Mt Piper Station went to Land and Environment court about pollution problems.	3.1
7	Air Quality - Regional	All efforts of the government must be directed to reducing greenhouse pollution, so that the CO2 levels fall immediately in NSW. New coal or gas fired power stations would drastically increase NSW greenhouse pollution by as much as 20%.	3.1
137	Air Quality - Regional	Civil Aviation Safety Authority (CASA) needs to assess any facility with an exhaust plume with an average vertical velocity of greater than 4.3 metres per second for the potential hazard to aircraft operations (please see CASA advisory Circular AC 139-05(0) for more information).	3.1
198	Air Quality - Regional	Coal fired power stations are the biggest source of carbon pollution in Australia.	3.1
164	Air Quality - Regional	The EA failed to identify that average sulphur dioxide emissions from Mt Piper and Wallerawang power stations massively exceed the EEC and World Bank guideline values of 750mg/m3 and 650mg/m3 respectively. This is because these power stations were built before 1997. Plants built or approved after 1997 must have an 800mg/m3 limit. The EA concluded that PAH concentrations in Lithgow are elevated, and ongoing action is needed to reduce those emissions. How will doubling emissions from Mt Piper achieve this?	3.1
225	Air Quality - Regional	These two power stations combined, powered by natural gas or coal, will emit between 12.96 and 23.35 Mt of CO2-e in greenhouse gases each year, not including emissions associated with construction. These projected emissions represent up to 14.78% of current NSW greenhouse gas emissions, (according to the Department of Environment, Climate Change and Water current NSW emissions are just above 158 Mt CO2-e).	3.1
28,34, 35, 37,61, 66, 67, 70, 79, 80, 116, 134, 142 147, 154, 159,	Air Quality – regional	Greenhouse pollution must begin to fall immediately in NSW. There must be an immediate ban on new fossil fuelled power stations in NSW.	3.1
4, 5, 6, 10, 11, 12, 13, 14, 16, 18, 19, 24,25, 103, 162, 163, 165, 166, 167, 168, 171, 179, 181, 190, 193, 214, 216, 217, 218, 220,	Air Quality – Regional	New coal or gas fired power stations would drastically increase NSW greenhouse pollution by as much as 20%	3.1

Submission number	Issue	Submission details	Response
221, 222, 223, 227, 229, 234, 237, 238, 239, 240, 243, 244, 246, 249, 253, 254, 257, 259, 262, 263, 265, 268, 277, 278, 281, 282, 287, 288, 289, 290, 292, 294, 295, 296, 297, 298, 300, 301, 302, 308, 311, 314, 315, 317, 319, 324, 326, 331, 333, 336, 338, 339, 340, 341, 342, 343, 344, 345, 347, 351, 357, 374, 377,			
135	Air quality – regional	The EA only identified NO' and SO' as having potential to cause DECC exceedances, but concluded the impact would be minimal. The EA failed to identify that average sulfur dioxide emissions from Mt Piper and Wallerawang power stations are already higher than those of the Central Coast power stations due to the higher sulfur content of coal from the Western coalfields. The EA fails to state that Wallerawang and Mount Piper Power Station NOx emission limits of 2500mg/m3 massively exceed EEC and World Bank guideline values of 750mg/m3 and 650mg/m3 respectively. This is because they were built before 1997. Plants built or approved after 1997 are supposed to have an 800mg/m3 limit. The EA failed to report a 2001 EPA air quality study (which identified that Polycyclic aromatic hydrocarbon PAH) concentrations in Lithgow were 2 - 3 times higher in summer, and 8 - 35 times higher in winter, than other Great Dividing Range towns including Armidale, Cooma, Orange and Tumut. The report postulated that this may be due to smoke from domestic solid fuel heaters. But those other cold centres also use solid fuel heaters, yet don't have 2 coal-fired power stations. The EPA concluded that Lithgow's PAH concentrations are elevated, and ongoing action is needed to reduce those emissions. Doubling emissions from an expanded Mt Piper won't help. The EA failed to identify the large quantity of visual particulates (flyash) regularly emanating from Wallerawang power station smoke stacks, perhaps because of the lower quality of flue gas cleaning equipment installed. Anyone driving west into the afternoon sun along the Great Western Highway can see this ugly pall as they cross Tunnel Hill. Dust from Kerosene Vale and Mt Piper fly-ash dumps, and open-cut coal mines near Mt Piper add to this pall.	3.1

Submission number	Issue	Submission details	Response
		This particulate pollution must have an impact on the long term health of local residents. The technology exists to address the problem, but Delta does not care and adheres to existing limits, which for Wallerawang Unit 7 are pre- 1972 limits, and for Unit 8 are pre-1997 limits. This proposal will almost double the amount of fly-ash produced, and almost double the rate at which this flyash will need to be safely disposed of on a daily basis. This is an enormous task. Adequate management of dust emissions from fly-ash dumps at both Kerosene Vale and Mt Piper have been a major ongoing environmental issue for a long time. Delta only began to address this issue after being prosecuted $45,000 plus $35,000 court costs in the Land & Environment Court in September 2007 for dust pollution at the KVAR. But there is still a long way to go before the fly-ash dust is adequately addressed. A new owner operator of an expanded Mt Piper may not have the will or the resources to do so. Adequate separation distances and buffer zones are one solution. However the Department of Planning failed to address this issue in approving the Expansion of Kerosene Vale Fly Ash Repository in late 2009, and the Extension of Mt Piper Ash and Brine Disposal in 2008. The West Australia EPA has generic buffer (separation) distances as part of its Industrial Buffer Policy. For Electric Power Generation based on impacts of Gaseous Emissions (NO", SO'), Noise, and Dust the recommended buffer distance to sensitive land uses is 3000 - 5000 metres. LEG notes this proposal is just 2000 metres and the Fly-ash Repository just 1000m from sensitive land use in Blackmans Flat. Winter conditions reduce mixing in the atmosphere due to stronger and more frequent temperature inversions. This is often compounded by still conditions. As a result, air pollutants are trapped in a shallow layer at ground level and concentrated. This is a regular occurrence in the Wallerawang, Lidsdale and Blackmans Flat areas, and has created severe long term health consequences for local residents. Similar fine dust and diesel particulate matter (PM 2.5) impacts are caused by the open-cut coal mines in particular, which will supply coal to this proposal, and from coal trucks and coal trains that will transport 7 million+ tonnes of coal per year to fuel this proposal. An almost doubling of air emissions in these areas by expanding Mt Piper by 2000 MW will also double the long term health risks for local residents.	
145	Approval process	The Government should be approving only environmentally responsible power generating projects.	3.3
62	Approval process	With the uncertainties in the economic outlook, the CPRS, CCS technology, and the developments in renewable, delaying a commitment to fossil fuels for 12 months would appear prudent.	3.3
53	Approvals process	Climate change is a reality. CO2 emissions must be taken into account by planning assessors under S3A assessment.	3.3
209	Approvals process – EPBC Act	The EA considers that the project would not result in significant impacts on matters of National Environmental Significances. The emissions from each plant at the start of operations would be slightly less than 2% of Australia's total emissions, if coal-fired, or just under 1% if gas. Professor Ross Garnaut recommended that it is in Australia's "national interest to reduce emissions by at least 25% if we are going to give our national icons, like the Great Barrier Reef and the Murray Darling a fighting chance against climate change. New projects that would increase national emissions by 1 or 2% each at a time when the science demands cuts of 25% at a minimum have the potential to significantly impact on natural ecosystems, in particular the Great Barrier Reef and the Murray Darling river system. Given this, the following matters of national environmental significance should be considered in a referral to the federal Minister for the Environment: • Listed threatened species and communities	3.2

Submission number	Issue	Submission details	Response
		• Listed migratory species • Ramsar wetlands of international importance • The Commonwealth marine environment	
203	Approvals process – Part 3A	If an increase in electricity generating capacity is classed as 'critical infrastructure' then the Part 3A process can be used to get renewable systems up and running instead of simply extending polluting systems.	3.3
366	Climate Change	The latest climate science says that climate change is happening more rapidly than previously thought and that we are in danger of passing natural tipping points that will increase the rate of warming further with drastic consequences for humanity. The rapid decline in Arctic sea ice, understandings about the movements of glaciers and ice sheets, the release of methane by melting permafrost, and the reduced capacity of both oceans and land to sequester carbon, suggest that the climate is more sensitive to anthropogenic sourced forcing than previously thought. Scientists are increasingly concerned that we are close to crossing natural climatic tipping points that accelerate the rate of global warming, potentially out of human control. Previously scientists and environmental organisations believed limiting global warming to below 2 degrees celsius and restricting carbon dioxide levels in the atmosphere to 450 parts per million should be the goal to avoid catastrophic climate change. The latest climate science and understanding of Earth's climate system have led to scientists and environmental organisations adopting a goal of limiting warming to below 1.5 degrees Celsius and restricting carbon dioxide levels in the atmosphere to below 350 parts per million. We have already experienced 0.8 degrees Celsius warning, and another 0.3 degrees is already in the climatic system through oceanic thermal inertia, meaning we are precariously close to 1.5 degrees and crossing tipping points that will accelerate climate change. The Director of the NASA Goddard Institute for Space Studies James Hansen and his co-workers state that "if humanity wishes to preserve a planet similar to that on which civilisation developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that C02 will need to be reduced from its current 385 ppm to at most 350 ppm" (Hansen *et al. 2008).* Rajendra Pachauri, head of the International Panel on Climate Change (IPCC) has said clearly and unequivocally that we must aim to keep the amount of carbon dioxide in the atmosphere at 350 parts per million (ppm) or below. Since the industrial revolution, we have increased the amount of carbon dioxide from 280ppm to 383ppm. According to an analysis by British consultancy Maplecroft, Australia is the highest per capita greenhouse polluter in the developed world with a figure of 20.5 tonnes per capita. This compares to the US with 19.7 tonnes, 4.5 tonnes for China and 1.1 tonnes for India. One of the key reasons Australia is such a large emitter is our reliance on coal-fired electricity generation. Currently 84% of Australia's electricity comes from coal fired power stations, which emit more than 170 million tonnes of carbon dioxide every year.	3.4
231	Climate Change - General	May cause damage to many people and ecosystems throughout Australia.	3.4
214, 215, 216, 217, 218, 220, 221	Climate Change – General	Climate Change is a global crisis that needs urgent attention	3.4
232, 259, 260,	Climate Change	Climate change is not a possibility but a law of physics that it is occurring.	3.4

Submission number	Issue	Submission details	Response
261, 262	– General		
155	Ecology	How will the site be rehabilitated at the end of its economic life (which is certain to be finite since in the longer term it will become uneconomic to ship fuel to it)? The financial provisions for end of life rehabilitation need to be disclosed.	3.5
144	Ecology	Now Delta is sucking dry the Duckmaloi Weirs threatening a regionally significant Platypus colony. Oberon Dam is currently at 12 % and falling. And many millions of litres of mine water are being extracted at unsustainable rates from beneath Newnes Plateau -threatening groundwater-dependent Endangered Ecological Communities of Blue Mountains shrub swamps.	3.5
132	Ecology	The EA ignores many externalities particularly the impact on the inland River systems. Energy production is a major driver of climate change and conversely climate change will have a major impact on water systems and resources (both quantity and quality. A decision cannot not afford to take a 'silo based' approach that will result in perverse conflicts that further exacerbate the energy-water nexus. The impact assessments on flora, fauna, economy and society make no attempt to quantify the damage via climate change.	3.5
136	Ecology	The EA ignores many externalities particularly the impact on the inland River systems. Energy production is a major driver of climate change and conversely climate change will have a major impact on water systems and resources (both quantity and quality. A decision cannot not afford to take a 'silo based' approach that will result in perverse conflicts, that further exacerbate the energy-water nexus. The impact assessments on flora, fauna, economy and society make no attempt to quantify the damage via climate change.	3.5
17	Ecology	Thousands of flora and fauna species are in immediate danger of extinction due to climate change and one of our biggest natural wonders, and tourism provider, the Great Barrier Reef will be destroyed if we don't focus on reducing our carbon footprint NOW.	3.5
135	Ecology	Water currently being pumped from Duckmaloi Weirs will not last long, and threatens to destroy the last Platypus colony in that area. Delta's power stations have already wiped out Platypus in the upper Coxs River.	3.5
75	Ecology	We recommend that the extraction of water from Newnes Plateau for Delta Electricity be limited to a maximum of 15 ML/day so as to protect the nationally endangered shrub swamps located on the plateau.	3.5
366	Economy	The final flaw in CCS is the enormous cost it will impose both financial, and in the extra energy the process consumes.	3.6
32	Economy - employment	Already, coal is not economically viable. More money is spent on government subsidies that the profit that is made from the coal industry. The number of jobs in the coal industry is a mere 2% of the total, and more workers are employed in Bunnings alone. At the moment, if you are generous, there are 6700 jobs in the coal industry, more likely to be 3000. If a transition was made to renewable energy, then there would be 73 800 jobs. Jobs will not be lost if coal is phased out – as long as private companies do not put workers on the scrapheap; but retraining and a transition to the renewable energy sector is made. Sweden does this in all cases, and the result is a country that is innovative with high economic development.	3.6
120	Economy - employment	Alternative renewable technologies would also generate more jobs	3.6
118	Economy - employment	Coal is not providing large numbers of jobs in regional communities and employment in renewable energy infrastructure would provide a comparable number of local jobs.	3.6
130	Economy -	Once construction is completed, fifty additional jobs will be created from the Mt Piper upgrade. Coal is not providing large numbers of jobs	3.6

Submission number	Issue	Submission details	Response
	employment	in regional communities and employment in renewable energy infrastructure would provide a comparable number of local jobs.	
209	Economy – employment	Approval of the Mt Piper and Bayswater power station projects would delay the transition from coal to renewable power costing NSW thousands of jobs in the renewable energy industries. A University of Newcastle report predicts 73,800 jobs in NSW in renewable energy and energy efficiency if the state government invests in a green energy future. That is more than ten times the number of jobs in coal-fired power stations and the coalmines that support them and far in excess of the new jobs predicted to be created by these projects. These jobs include research and development, manufacturing and installation and operation of new renewable energy projects. These are long-term sustainable jobs that will be able to weather the transition away from fossil fuel power.	3.6
150	Economy – employment	As coal fired power doesn't produce many new jobs and renewable energy produces a comparable number of jobs, renewable energy production is roughly equivalent on the jobs production criteria to coal. Due to the extensive mechanisation and bulk handling practices, the extraction and transport of coal no longer 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 the last 30 years by tens of thousands of workers.	3.6
96, 98, 101, 107, 131, 146	Economy – employment	Once construction is completed, fifty additional jobs will be created from the Mt Piper upgrade. Coal is not providing large numbers of jobs in regional communities and employment in renewable energy infrastructure would provide a comparable number of local jobs.	3.6
198	Economy – employment	Only 50 additional jobs will be created by the upgrade. Employment in renewable energy infrastructure would provide a comparable number of local jobs.	3.6
115	Economy – employment	The number of jobs provided by investing in renewable energy would be equal to or greater than the fifty new jobs created from this current proposal.	3.6
105	Economy – employment	This extension will create minimum local jobs - An investment in renewable power would create at least as many jobs, probably more.	3.6
205	Energy	The EA ignores many externalities particularly the impact on the inland River systems. Energy production is a major driver of climate change.	3.7
166	General – General Opposition	A submission against new fossil fuel power stations at Bayswater (MP09_0118) and Mt Piper (MP09_0119).	3.8
175	General – General Opposition	An unsustainable, unethical and uninspired proposal.	3.8
208	General – General Opposition	BCMS Opposes a coal fired power station at Mt Piper	3.8

Submission number	Issue	Submission details	Response
174	General – General Opposition	Building new high pollution coat fired power stations is madness	3.8
155	General – General Opposition	Concerned that this proposal is contrary to the interests of the people of Australia as a whole, the people of NSW, and to the people in the local community area in particular.	3.8
21	General – General Opposition	Do not build a fossil fuel power plant at Mt Piper or at Bayswater.	3.8
197	General – General Opposition	Even if the proposed new baseload power stations were fuelled by natural gas, they would increase this state's greenhouse pollution. Both are unacceptable, as both send the states greenhouse pollution in the exact opposite direction as where it needs to go.	3.8
255	General – General Opposition	Generally Oppose the idea of new fossil fuelled power stations.	3.8
177	General – General Opposition	Great concern for the proposal. Don't build more coal fired electricity plants.	3.8
19	General – General Opposition	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.	3.8
31	General – General Opposition	I am completely opposed to this project.	3.8
117	General – general opposition	I am opposed to Delta Electricity's Concept Plan application for a new fossil fuel fired power station at Mt Piper. I am opposed to Delta Electricity's proposal to build significant additional generating capacity (2000 Mw) that is fired by coal or gas. Delta Electricity's proposal to build a new fossil fuel fired power station at Mt Piper is preposterous, and any government approval of such a proposal would have to be considered irresponsible and negligent. To try and excuse it by saying that space will be provided for retrofitting carbon capture and sequestration, an as yet unproven technology, at some future unknown date is simply an insult to the community's intelligence.	3.8
113	General – general opposition	I am totally opposed to expanding Mt Piper capacity. The time for dirty coal generation and unsustainable coal mining should be disappearing. We do not and will not need more electricity. The government should be focussing on reducing electricity consumption not encouraging it.	3.8
11	General – General Opposition	I am very concerned about the news that new fossil fuel powered power stations are being considered at Bayswater (MP 09_0118) and Mt Piper (MP09_0119).	3.8
17	General –	I am very opposed to this proposal. I strongly urge you not to approve this project.	3.8

Submission number	Issue	Submission details	Response
	General Opposition		
55	General – General Opposition	I am writing to object to this proposed new coal or gas fired power station. I find it hard to believe that my state government can be making such proposals especially considering the serious effects of coal and gas burning on the environment.	3.8
78	General – General Opposition	I am writing to strongly oppose the proposed new power station at Bayswater. 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 now it could endorse such a proposal.	3.8
52	General – General Opposition	I believe that all new energy should come from pollution free, renewable energy and so I absolutely object to the new plant.	3.8
123	General – general opposition	I believe this is environmentally wrong especially when this sort of power generation is going to affect climate change.	3.8
41	General – General Opposition	I cannot believe you are going to do this. What is wrong with our government? I am so proud to be an Australia and when we are a country that lives and breathes the outdoors, I'm unable to conceive why you think the above is an effective step forward.	3.8
148	General – General Opposition	I consider it an absurdity to build a fossil fuelled power station in NSW at this point in time.	3.8
146	General – General Opposition	I heartily condemn even any consideration on your behalf towards this plan.	3.8
57	General – General Opposition	I object strongly to this proposal. If this proposal goes ahead you are locking us into another 30 years of polluting coal power. Reconsideration is essential.	3.8
76	General – General Opposition	I object to the building of any new fossil fuelled power stations, including Bayswater (MP09_0118), Mt Piper (MP09_0119) and Munmorah (MP09_0117). The Preliminary Environmental Assessments have not provided sufficient justification for the project to be approved. Therefore it is requested that the proposals be rejected.	3.8
122	General – general opposition	I object to the expansion of the Mt Piper power station on moral grounds. There is nothing that can justify the expansion of an industry that causes so much damage.	3.8
204	General – General Opposition	I object to the extension of the Mount Piper Power Station.	3.8
205	General –	I object to the extension of the Mount Piper Power Station. The expansion of fossil fuel power in Australia is not in the best interests of our	3.8

Submission number	Issue	Submission details	Response
	General Opposition	current or future populations – economically, environmentally or socially.	
127	General – general opposition	I object to this Concept Plan Application being the location of Mt Piper.	3.8
22	General – General Opposition	I oppose the approval of the Mt Piper Power Station.	3.8
53	General – General Opposition	I oppose the new power station. This is a very short sighted proposal.	3.8
32	General – General Opposition	I suggest you read this article: http://climateconversation.org.au/content/two-new-coal-power-sations-nsw-environmental-disaster As a member of the Macquarie electorate, I have a local responsibility in preventing the construction of this abomination. I am a firm believer in the principle "think global, act local". Well, this is exactly what I intended to do. Mr Debus, after my correspondence with you I was under the belief that you were concerned about climate change. Well, apparently I was wrong. I will do everything within my power to stop this construction – including organising rallies and speaking out publically on talkback radio and the gazette. There is no way I can support the building of any new coal power stations, whatsoever. I also do not support the expansion of any coal mines or existing power stations. We need to be doing exactly the opposite, phasing out coal so we can move to zero emissions future as rapidly as possible.	3.8
136	General – general opposition	I think that the New Base Load Power Station (Mount Piper Extension)should be rejected	3.8
144	General – general opposition	I wish to register my total opposition to the coal-fuelled option of the proposed Base Load Power Station (Mount Piper Extension) - Application Number MP 09_0119.	3.8
104	General – general opposition	I would like to register my opposition to the construction of the power station extension at Mt Piper.	3.8
173	General – General Opposition	I'll be definitely on the barricades around Lithgow if this is tried.	3.8
141	General – general opposition	In this age of moving towards green energy I do not agree with the set up of this power station.	3.8
15	General – General	It is a scandal to propose new coal or gas fired power plants for NSW.	3.8

Submission number	Issue	Submission details	Response
	Opposition		
102	General – general opposition	It is of great concern to me that this proposal may go ahead. I believe that a move away from this polluting and unethical form of energy is needed.	3.8
91	General – General Opposition	Make the right decision and reject this proposal.	3.8
109	General – general opposition	More coal power stations are a step in the wrong direction both for NSW government and mankind. The money and time spent on doing this would be much better used on educating corporations and people of NSW to reduce and conserve electricity.	3.8
42	General – General Opposition	New gas or coal fired power plants are unnecessary in that they represent greater cost to the NSW government over the long term, both in monetary terms and in environmental terms.	3.8
40	General – General Opposition	NSW citizens do not want another non- renewable power plant.	3.8
126	General – general opposition	Obviously I'm opposed to the rapid expansion of coal fired power stations. It is sort of in my interests, given that I'm planning to be around for the next sixty years at least. My interests are survival, clean water, fresh air, food, freedom from natural disasters and the same for the other 6-7 billion people that I share the plant with (especially indigenous peoples, Pacific islanders, Sub-Saharan Africans and the rest of the Global South)	3.8
258	General – General Opposition	Oppose proposal	3.8
153	General – General Opposition	Please do not approve any new coal fired power plants. I do not support this proposal.	3.8
48	General – General Opposition	Please do not go ahead with this plant. It is the problem of all of us – the responsibility is yours. Do not do this.	3.8
49	General – General Opposition	Please reconsider the idea of building a polluting coal/gas fired power station.	3.8
23	General – General Opposition	Stop raping the planet now.	3.8
202	General –	Submission against the new coal fired power station at Mt Piper. There is no place for a new coal fired power station at this point in history.	3.8

Submission number	Issue	Submission details	Response
	General Opposition		
203	General – General Opposition	The government should be doing all it can to develop energy sources that are renewable and non polluting.	3.8
135	General – general opposition	The membership of Lithgow Environment Group resolved unanimously to oppose any expansion of Mount Piper power station fuelled by coal, and to oppose any new coal mines in the region, which will be required to supply fuel for this proposal. A coal-fuelled proposal on this scale is totally unsustainable and totally unacceptable on human health and environmental grounds. This proposal must be rejected.	3.8
75	General – General Opposition	The proposed expansion of the Mt Piper power plant should be rejected as causing unacceptable impacts on water resources and because it relies on coal resources.8	3.8
114	General – general opposition	There is no good reason for the government to approve this project. Government support for such a proposal would be little short of corruption, and would show complete disregard for the future wellbeing of Australian people.	3.8
36	General – General opposition	There must be an immediate ban on new fossil fuelled power stations in NSW.	3.8
157	General – General Opposition	These proposals are redolent with short-sightedness of the coal lobby. They are unbelievably, incredibly stupid. Building two fossil fuelled dinosaurs is a bad idea, and a polluting waste of time and money. They will exacerbate environmental and human health issues in surrounding communities due to the increased air and water pollution. They will ensure the Hunter Valley and Lithgow regions remain firmly dependent on the destructive coal industry.	3.8
9	General – General Opposition	This is a submission against a new fossil fuel powered power station at Mt Piper (MP09_0119). Expanding coal power is not only irrational but criminal, and may well be judged as such by courts of law in the future.	3.8
147	General – General Opposition	This is a submission against new fossil fuel powered poser stations at Mt Piper (MP 09_0119).	3.8
80	General – general opposition	This is a submission against new fossil fuel powered power station at Bayswater (MP09_0119) and Mt Piper (MP09_0119)	3.8
116	General – general opposition	This is a submission against new fossil fuel powered power stations at Bayswater (MP09 _0118) and Mt Piper (MP09_0119)	3.8
134	General – general	This is a submission against new fossil fuel powered power station at Mt Piper (MP09_0119)	3.8

Submission number	Issue	Submission details	Response
	opposition		
3, 10, 16, 24, 25, 28, 36, 61, 66, 67, 70, 80, 154, 159, 162, 163, 167, 168, 171, 179, 181, 193, 199, 222, 223, 224, 225,227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243-254, 256, 257, 259-268, 270-282, 284, 286, 289, 290-305, 307-313, 315, 317-321, 323-329, 331-353, 355-359, 361-363, 367-382	General – General Opposition	This is a submission against new fossil fuel powered power stations at Bayswater (MP 09_0118 and Mt Piper (MP 09_0119)	3.8
149	General – General Opposition	This is a submission against this proposed project.	3.8
132	General – general opposition	This is an objection to the proposal for a coal or gas fired power station in NSW at Mt Piper Lithgow	3.8
161	General – General Opposition	This is an outrageous plan from our government	3.8
241	General – General Opposition	This is insane and coal fired power stations are the single greatest threat to the climate.	3.8
46	General – General Opposition	This is the most irresponsible and short sighted power generation proposal from the NSW Govt.	3.8

Submission number	Issue	Submission details	Response
82	General – General Opposition	This proposal should be rejected as the global community is struggling to reduce greenhouse pollution. It would be irresponsible for the NSW Government to make the climate problem worse by approving massive new polluting power stations. All new energy should be from pollution free sources so we can stop increasing emission and being the transition to a zero carbon economy,	3.8
138	General – general opposition	This proposal should be rejected for environmental reasons	3.8
170	General – General Opposition	We should be moving into a sustainable future not this form of insanity.	3.8
156	General – General Opposition	We strongly oppose the proposed Mt Piper power station extension. Neither Gas nor Coal is acceptable as a baseload power source. Coal should not be contemplated.	3.8
103	General – general opposition	Why is the NSWS government investing in coal fired powered power stations? This technology should be banned.	3.8
137	General – General Support	We have examined the material supporting the Environmental Assessment, and can advise that it has no concerns with the proposed development at this time.	3.8
39	General - Oppose Coal	Although I reside in the Hunter region and have made this application re: the proposed Bayswater Project, I believe the issues are similar. I am opposed to any new coal fired power station.	3.8
2	General - Oppose Coal	Expanding coal fired power is precisely the wrong thing to do.	3.8
54	General - Oppose Coal	I am absolutely opposed to any development of a power station that uses coal.	3.8
30	General - Oppose Coal	I am opposed to any new coal power stations in NSW.	3.8
51	General - Oppose Coal	I am totally opposed to a new coal fired power station at Mount Piper in the Blue Mountains. I believe that no new coal fired power stations should be built in NSW	3.8
31	General - Oppose Coal	I am totally opposed to any expansion of the Mount Piper coal powered power station or any new base load coal powered power station.	3.8
50	General - Oppose Coal	I do not believe any more coal fired power stations should be introduced.	3.8
29	General - Oppose Coal	I object to this new coal powered station.	3.8
45	General - Oppose Coal	It is unfathomable that in this day and age when after a hundred plus years of polluting our atmosphere, we continue to consider coal as a major provider of energy.	3.8
43, 44, 47, 51	General -	New coal plants are immoral and should be illegal	3.8

Submission number	Issue	Submission details	Response
	Oppose Coal		
53	General - Oppose Coal	New coal plants are immoral and should be illegal particularly without carbon capture and storage facilities.	3.8
65, 69, 72, 57, 60, 64,	General - Oppose coal	New coal plants are immoral and should be illegal.	3.8
1	General - Oppose Coal	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.	3.8
207	General – Oppose coal	All coal fired electricity generation must halt.	3.8
204	General – Oppose Coal	Building more coal fired power stations in this time of increasing global warming and climate change is inappropriate.	3.8
56	General – Oppose coal	Climate change will result in widespread human suffering – there is no doubt about this. Now that we finally admitted that we have had an enormous effect on the plant'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 such as the proposed Mt Piper power station is not just immoral, it's madness.	3.8
246	General – Oppose coal	Coal fire power stations are the single greatest threat to the climate.	3.8
369	General – Oppose coal	Coal fired power is madness. James Hansen, NASA Scientist, has said "coal fired power stations are factories of death".	3.8
187	General – Oppose coal	Coal fired power stations are the greatest threat to our climate.	3.8
214, 215, 216, 217, 218, 220, 221,	General – Oppose coal	Coal fired stations are a threat to life on Earth. There must be an immediate ban on new fossil fuelled power stations in NSW.	3.8
206	General – Oppose coal	Coal power is not helping out current environmental crisis, building new power stations is only feeding the problem.	3.8
186	General – Oppose coal	Express concern with the proposed Mount Piper coal fired power station. New coal fired power plans risk being mothballed within 10 years if they are built without carbon capture and storage technology, as Australia will have to meet carbon emission reduction targets.	3.8
188	General – Oppose coal	Fossil fuel electricity will harm our children, our economy and the basis of our continued ability to live on this planet.	3.8
145	General – oppose coal	I am totally opposed to additional coal fired power stations in NSW.	3.8
8	General – Oppose coal	I believe that a coal fired power station should not even be considered these days.	3.8
22	General – Oppose Coal	I believe that gas fired peaking plant will be necessary to complement wind and solar generators, but cannot support this proposal which might be coal fired.	3.8

Submission number	Issue	Submission details	Response
81	General – oppose Coal	I object strongly to the increased use of coal for power generation. Energy efficiency is a far better method of achieving increased power capacity.	3.8
100	General – oppose coal	I oppose the expansion of the coal fired power station.	3.8
74	General – oppose coal	I strongly object to the proposed new coal fired power station (the Mt Piper extension).	3.8
189	General – Oppose coal	I will stand alongside thousands of other to stop the attempts to build the power station. The fossil fuel age is over.	3.8
68	General – Oppose coal	I wish to express my strong opposition to the proposed coal generation baseload power plant at Mt Piper	3.8
373	General – Oppose coal	I wish to Oppose the applications for power stations which are coal fired and will only increase greenhouse pollution in NSW.	3.8
169	General – Oppose coal	Irresponsible for erecting another coal fired power plant.	3.8
147	General – Oppose coal	It does not make sense to approve the expansion of existing or the building of any new coal fired power stations.	3.8
178	General – Oppose coal	It is absurd to be going ahead with building more pollution creating coal fired power stations. I cannot believe that you cannot find a better alternative and intelligent solutions to the challenges of the future.	3.8
133	General – oppose coal	No more coal	3.8
160	General – Oppose coal	NSW does not need another coal fired power station.	3.8
183	General – Oppose coal	Oppose the construction of more coal fired power plants in NSW. Coal is a climate disaster.	3.8
65	General – Oppose coal	Please don't lock us into another 30 years of polluting coal power.	3.8
201	General – Oppose coal	Power production has a negative impact on the planet and environment.	3.8
232	General – Oppose coal	Source that should not be dug up.	3.8
200	General – Oppose coal	The efficiency of existing coal fired power generation plants should be improved in preference to the construction of the new plant.	3.8
119	General – oppose coal	The government is being totally irresponsible in even suggesting that we expand the number of coal fired power stations in Australia.	3.8
180	General – Oppose coal	There needs to be a ban on fossil fuelled power stations. Coal fired power and its emissions threaten to disrupt the climate and harm life on earth.	3.8

Submission number	Issue	Submission details	Response
120	General - oppose coal.	As the policy is in England, no new coal burning projects should go ahead in Australia without CO2 being removed by the use of clean coal technology. As such technology is absent in the proposed project, going ahead with it would be environmentally unacceptable.	3.8
206	General – Oppose gas	I object to any new coal or gas fuelled power plants.	3.8
366	General – oppose gas	The gas-fired options would add 7 million tonnes from Mt Piper, and almost 5.9 million tonnes from Bayswater B. This still represents a significant increase in NSW emissions.	3.8
27 & 38	General - Support Gas	The gas fired idea is good because it could help to reconstruct the whole of the Mt Piper Power Station in years to come. The environment is more important that a couple of jobs. I think that natural gas is the want to go because Mt Piper Power Station needs to reduce emissions in years to come.	3.8
212	General – support gas	A balance is needed between securing the option of power for the future of the state and that is why I do not object to the gas option.	3.8
73	General – support gas	My family and I support the use of natural gas as a cleaner technology and we have an interest because we live close to the proximity of the proposed plant and assume that gas would mean less dust and pollution from the plant and associated industry.	3.8
84	General – support gas	My support is for gas. We have plenty of it and it is much better than coal. Coal is cheap but it is slowly killing the planet.	3.8
135	General – support gas	The members expressed a strong preference for renewable, low or zero-emissions technology. However, conditionally support a natural gas project subject to being satisfied that water pollution and other emissions at proposed gas extraction sites are being adequately managed. LEG members recommend that the Department of Planning heeds the advice of Premier Rees *(Rees Plans Green Power Revolution, SMH, 19/10/2009),* when the stated *he wants to push the expansion of clean energy in NSW in a bid to end the States reliance on the coal industry.* And he signalled that a new base load power station in NSW will now be gas, not coal. The membership of Lithgow Environment Group hopes that environmental responsibility will prevail, and that Mount Piper will be the next gas-fuelled base load power station in NSW.	3.8
123	General – support gas	Why not become a leader in a true environment sense and adopt a clean technology by using Australia's abundant natural gas. Yes the cost of piping is a consideration, but they did this at Loy Wang. How differently the NSW government would be perceived if they did this.	3.8
99	General – oppose coal	I wish to lodge my objection to the extension of the Mt Piper coal station. This action flies in the face of all the available evidence on the dire necessity to cut down on burning fossil fuels, which the state government supposedly supports. I am disgusted with this government's attitude to the ordinary citizens of NSW who will be paying a high price for the short sighted monetary gains that this extension will promote. Please stop this now.	3.8
81	General – oppose coal	I object strongly to the increased use of coal for power generation. Energy efficiency is a far better method of achieving increased power capacity.	3.8
144	General – oppose coal	I wish to register my total opposition to the coal-fuelled option of the proposed Base Load Power Station (Mount Piper Extension) - Application Number MP 09_0119. I believe that N5W Planning should listen to the Premier (Rees Plans Green Power Revolution, 5MH, *19/10/2009).* He stated quite clearly that he wants to push the expansion of clean energy in NSW in a bid to end the States reliance on the coal industry, and that a new base	3.8

Submission number	Issue	Submission details	Response
		load power station in NSW will now be gas, not coal. The EA failed to identify that Blackmans Flat is located in a valley, that Mt Piper Power Station sits at the head of and over that valley, and that all noise, dust and other pollutants from the Power Station echo around in, funnel through, and are concentrated in this valley, substantially increasing noise and dust impacts. A coal-fuelled proposal on this scale is totally unsustainable for the upper Coxs River, and is totally unacceptable on human health and environmental grounds. This proposal must be rejected.	
166	Greenhouse emissions	Coal fired power stations are Australia's single biggest source. This will fuel climate change.	3.4
182	Greenhouse emissions	Coal is a main pollutant of greenhouse gases in the atmosphere.	3.4
105	Greenhouse emissions	Need to reduce emissions not accelerate the global warming process	3.4
184	Greenhouse emissions	New coal fired power stations should not be built as they contribute to greenhouse gas emissions.	3.4
194	Greenhouse emissions	The proposal should be rejected on the grounds that an additional 11 million tonnes of CO2-e/annum of greenhouse emissions is unacceptable.	3.4
1	Greenhouse emissions	The proposed expansion of coal-fired power stations would increase NSW greenhouse gas emissions by one-third and effectively stifle investment in sustainable, renewable technologies and industries.	3.4
258	Greenhouse emissions	These proposals would significantly contribute to an increase in emissions and to the development of dangerous climate change.	3.4
366	Greenhouse emissions	We submit that the proposal must be rejected on the grounds that it will emit substantial amounts of greenhouse gas emissions that will contribute to catastrophic climate change. Given our knowledge about climate change and the attempt to forge a global agreement to substantially reduce greenhouse gas emissions, as well as Commonwealth and NSW attempts to reduce emissions, it would be a negligent action to approve a new coal-fired power station. A gas-fired power station would only be acceptable to provide peak power, rather than additional base-load power, and only as part of a transition plan toward zero emission electricity generation. It is simply unacceptable to be increasing emissions in the context of rapid global warming. NSW currently emits 67 million tonnes of carbon dioxide from stationary energy every year. The proposed coal-fired generators at Bayswater will add an extra 12.4 million tonnes of carbon pollution every year, while the new generators at Mount Piper will add another 10.4 million tonnes. This represents a 34% increase in emissions from stationary energy in NSW.	3.4
94	Greenhouse emissions - ETS	Cost effectiveness: a supercritical coal burning station (without CCS) may have a levelised cost of $40 per Megawatt hour and produce 800 kg of CO2 per Megawatt hour. At the maximum advertised capacity of 2000 MW and an 85% duty cycle, this power station will produce about 12 million tonnes of CO2 per year over its operational lifetime which is probably 35 years. Similarly a natural gas combined cycle station may have a levelised cost of $48 per tonne produce 500kg of CO2 per Mw hour. Combining each of these with a carbon dioxide price of $25 per tonne produces a cost just under $60 per Mw hour. At the initial CPRS	3.4

Submission number	Issue	Submission details	Response
		price cap of $40 per tonne this rises to a total cost of about $70 per MW hour. It should also be noted that the initial price cap of $40 per tonne is indexed to rise by 5% per year for 5 years, so by the end of 5 years it would be $48. What it would be over the lifetime of the proposed station is very much dependent on decisions of this type, which emit significant amounts of CO2 and therefore require many permits which have to be made up by cuts elsewhere. If this station goes ahead, and if other organisations are permitted to go ahead in this manner, the CO2 price is likely to escalate to much higher levels. The costs of operational generation plus the CO2 permit cost line up very closely with energy costs from renewable sources such as wind and solar thermal. Solar thermal is of particular relevance here because NSW has an enormous resource and there is little or no environmental impact, and very unlikely to be community objections to large scale implementations. Accordingly we believe there is a very strong financial case to build this power generation capacity using a mix of renewable technologies, with solar thermal taking the major share. Since this case depends on counting the cost of CO2 permits under the CPRS in the cost of the fossil fuelled solutions, which bears some additional discussion. We recognise that under the CPRS legislation coal burning power stations will receive 95% (originally 90%) of their permits free. However, as we understand the CPRS, this does not apply to new generators. It is described as a 'once-for-all fixed administrative allocation of permits'. Accordingly, construction of a new generator would not result in an increase in the number of permits available, and permits would therefore need to be bought at auction.	
155	Greenhouse emissions - ETS	Cost effectiveness: a supercritical coal burning station (without CCS) may have a levelised cost of $40 per Megawatt hour and produce 800 kg of CO2 per Megawatt hour. At the maximum advertised capacity of 2000 MW and an 85% duty cycle, this power station will produce about 12 million tonnes of CO2 per year over its operational lifetime which is probably 35 years. Similarly a natural gas combined cycle station may have a levelised cost of $48 per tonne produce 500kg of CO2 per Mw hour. Combining each of these with a carbon dioxide price of $25 per tonne produces a cost just under $60 per Mw hour. At the initial CPRS price cap of $40 per tonne this rises to a total cost of about $70 per MW hour. It should also be noted that the initial price cap of $40 per tonne is indexed to rise by 5% per year for 5 years, so by the end of 5 years it would be $48. What it would be over the lifetime of the proposed station is very much dependent on decisions of this type, which emit significant amounts of CO2 and therefore require many permits which have to be made up by cuts elsewhere. If this station goes ahead, and if other organisations are permitted to go ahead in this manner, the CO2 price is likely to escalate to much higher levels. The costs of operational generation plus the CO2 permit cost line up very closely with energy costs from renewable sources such as wind and solar thermal. Solar thermal is of particular relevance here because NSW has an enormous resource and there is little or no environmental impact, and very unlikely to be community objections to large scale implementations. Accordingly we believe there is a very strong financial case to build this power generation capacity using a mix of renewable technologies, with solar thermal taking the major share. Since this case depends on counting the cost of CO2 permits under the CPRS in the cost of the fossil fuelled solutions, which bears some additional discussion. We recognise that under the CPRS legislation coal burning power stations will receive 95% (originally 90%) of their permits free. However, as we understand the CPRS, this does not apply to new generators. It is described as a 'once-for-all fixed administrative allocation of permits'. Accordingly, construction of a new generator would not result in an increase in the number of permits available, and permits would therefore need to be bought at auction.	3.4
75	Greenhouse emissions - ETS	The proposed Mt Piper power plant expansion be deferred until the nature of the emissions trading scheme is known.	3.4

Submission number	Issue	Submission details	Response
22	Greenhouse emissions – ETS	Coal fired generators around the country are lobbying for subsidies when the ETS is introduced. Delta Electricity will be claiming permits from a limited size pool, this transferring their carbon costs onto other industries to the detriment of the rest of the economy.	3.4
190	Greenhouse emissions – ETS	Proposal should be deferred until the nature of the emissions trading scheme is known	3.4
83	Greenhouse emissions - global effects	Clean coal technology is not available and will not be available for a long time. Australia stands to lose much in climate change. Projects like this are short sighted. I once drove past the station and it started raining and my windscreen was covered by white specks.	3.4
3, 4, 5, 6, 10, 11, 13, 14, 16, 18, 19, 24, 25, 162, 163, 165, 167, 168, 171, 179, 181, 190, 222, 223, 227, 229, 234, 235, 237, 238, 239, 240, 243, 244, 249, 253, 254, 257, 263, 265, 268, 270, 272, 273	Greenhouse emissions - global effects	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.	3.4
348, 349	Greenhouse emissions - global effects	Climate change is a global crisis that needs urgent action.	3.4
17	Greenhouse emissions - global effects	Climate change is reaching a very dangerous point and the future of the plant is in real threat. The proposal to build more coal or gas fired power stations is dangerous and irresponsible in our current climate. Australia is already the world's largest emitter of greenhouse emissions per person and the proposal to build two new power stations will increase the emissions of NSW alone by 20%. This will spell disaster for the already fragile climate. Climate change is an urgent and dangerous problem. We need to drastically reduce emissions for any hope of reducing the impacts on the planet. The building of anymore power stations is suicide for the climate, thousands of species, and humans.	3.4
7	Greenhouse emissions - global effects	Climate science is extremely clear that climate change is happening and needs urgent action. 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.	3.4
15	Greenhouse emissions - global effects	Coal fired power stations are one of the largest producers of toxic carbon emissions, and to propose the construction of two new power generators reliant on this outdated and destructive technology is a disgrace. Climate change is a real and urgent threat to our communities and our planet. Please show the courage to take action on climate change.	3.4
191	Greenhouse	Fossil fuel fired power plant will significantly increase green house gas emissions and will have a direct negative impact on impoverished	3.4

Submission number	Issue	Submission details	Response
	emissions - global effects	peoples across the world. 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.	
3-6, 10, 11, 13, 14, 16, 18, 19, 24, 25, 56, 162, 163, 165, 167, 168, 171, 179, 181, 190, 193, 197, 222, 223, 224, 227, 234, 235, 237, 238, 240, 243, 244, 249, 252, 253, 254, 256, 257, 263-268, 270, 272-279,	Greenhouse emissions - global effects	Greenhouse pollution must begin to fall immediately in NSW. There must be an immediate ban on new fossil fuelled power stations in NSW.	3.4
281, 282, 288, 290, 292, 294, 295-298, 300-302, 305, 306, 308, 309, 311, 312, 314, 315, 317, 319, 320, 321, 323, 324, 333, 334, 336, 337, 338, 339, 340-347, 351, 352, 355, 357, 359, 372, 373, 374, 377, 379, 380, 382,	Greenhouse emissions - global effects	Greenhouse pollution must begin to fall immediately in NSW. There must be an immediate ban on new fossil fuelled power stations in NSW. 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.	3.4
241	Greenhouse emissions - global effects	How could any government official approve the project?	3.4
255	Greenhouse emissions - global effects	How will these stations affect the serious attempts of wide sections of the Australian and global populations to act to prevent the development of climate change.	3.4
20	Greenhouse	I object to new coal fired power stations because of their CO2 emissions which contribute to climate change.	3.4

Submission number	Issue	Submission details	Response
	emissions - global effects		
381	Greenhouse emissions - global effects	I submit that there must be an urgent transition to renewable energy to keep CO_2 levels to 350ppm	3.4
12	Greenhouse emissions - global effects	In order to avoid dangerous climate change greenhouse pollution must begin to fall immediately in NSW. Therefore any proposed new infrastructure that will increase greenhouse pollution output in NSW should not be approved.	3.4
195	Greenhouse emissions - global effects	Oppose construction based on a result in increased greenhouse gas emissions.	3.4
26	Greenhouse emissions - global effects	The approval of this proposal would be a disastrous setback 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 and global movement acting towards reducing their footprint. The hypocrisy in this proposal's approval would be a devastating blow with frightening environmental consequences.	3.4
22	Greenhouse emissions - global effects	The earth faces a climate crisis caused by CO_2 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.	3.4
29	Greenhouse emissions - global effects	The increased impacts on greenhouse gas emissions must not be allowed. We are already past the point of avoiding negative climate change. To add more greenhouse gas immersions is irresponsible and reprehensible.	3.4
91	Greenhouse emissions - global effects	The Mt Piper expansion would substantially increase NSW greenhouse gas emissions. There is global urgency to combat climate change by rapidly decreasing our output of greenhouse gases.	3.4
21	Greenhouse emissions - global effects	The new plants will contribute to climate change and deny the opportunity for NSW to be a leader in green 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.	3.4
82	Greenhouse emissions - global effects	The NSW government has stated that it wants to act on climate change and lower the state's emissions. How can this be reconciled with burning more coal to make electricity.	3.4
87, 88, 89	Greenhouse emissions - global effects	The NSW government has stated that it wants to act on climate change and lower the states emissions. How can this be reconciled with burning more coal?	3.4
12	Greenhouse emissions - global effects	There is overwhelming evidence that climate change is a global crisis that needs urgent and immediate action. Coal fired power stations such as that proposed are the single greatest threat to the climate change.	3.4

Submission number	Issue	Submission details	Response
283-285	Greenhouse emissions - global effects	There must be an immediate ban on new fossil fuelled power stations in NSW. 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.	3.4
329	Greenhouse emissions - global effects	There must be an immediate ban on new fossil fuelled power stations in NSW. Climate change is a global crisis that needs urgent action.	3.4
332	Greenhouse emissions - global effects	There must be an immediate ban on new fossil fuelled power stations in NSW. Climate change is a global crisis that needs urgent action.	3.4
78, 79, 80, 88, 89, 287	Greenhouse emissions - global effects	There must be an immediate ban on new fossil fuelled power stations in NSW. 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.	3.4
236, 259, 293	Greenhouse emissions - global effects	There must be an immediate ban on new fossil fuelled power stations in NSW.	3.4
9	Greenhouse emissions - global effects	This proposed new power station would contribute very significantly to greenhouse gas emissions in Australia. 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.	3.4
376	Greenhouse emissions - global effects	We desperately need to reduce GHG emissions. Therefore there should be a total moratorium on building any new fossil fuelled power plants.	3.4
169	Greenhouse emissions - global effects	We need to reduce out carbon emissions to zero.	3.4
103	Greenhouse emissions – global effects	Above all, why does the NSW government continue to make noise about the need to take action on climate change by reducing carbon emissions, but in action and policy actually increase emissions by burning ever more coal?	3.4
151	Greenhouse emissions – global effects	All power generation facilities should be based on renewable energy. Every effort should be made to lower, not raise, carbon emissions.	3.4
150	Greenhouse emissions – global effects	Approving the extension to Mt Piper would substantially increase NSW's GHG emissions for up to 50 years in the future (the lifetime of a coal fire power station). If approved and GHG emissions are not massively constrained, GHG emissions will need to be made elsewhere to compensate for this ill advised multi-decadal GHG emissions binge.	3.4

Submission number	Issue	Submission details	Response
52	Greenhouse emissions – global effects	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 government currently had negotiators involved in the lead up 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.	3.4
205	Greenhouse emissions – global effects	Both coal and gas will increase greenhouse gases and we have to reduce our CO2 emissions before climate change tipping points occur. The impact assessments on flora, fauna, economy and society make no attempt to quantify the damage via climate change.	3.4
79	Greenhouse emissions – global effects	Climate change is a global crisis that needs urgent attention. Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth.	3.4
80	Greenhouse emissions – global effects	Climate change is a global crisis that needs urgent attention. Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth.	3.4
116	Greenhouse emissions – global effects	Climate change is a global crisis that needs urgent attention. Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth.	3.4
134, 142	Greenhouse emissions – global effects	Climate change is a global crisis that needs urgent attention. Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth. New coal or gas fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%.	3.4
28, 34, 35, 36, 37, 61, 66, 67, 70, 79, 80, 147, 154, 159,	Greenhouse emissions – global effects	Climate change is a global crisis that needs urgent attention. Coal fired power stations are the single greatest threat to the climate, and therefore to life on earth.	3.4
122	Greenhouse emissions – global effects	Climate change is a proven scientific fact and I believe NSW government should be doing what it can to reduce carbon emissions not increase them.	3.4
43, 44 ,47, 51, 53, 57, 60, 64, 65, 69, 72, 81,	Greenhouse emissions – global effects	Climate change is a serious threat and we need to rapidly cut greenhouse gas emissions, not increase them.	3.4
81	Greenhouse emissions – global effects	CO2 emissions, toxicity of coal and overall environmental degradation caused by these sorts of ventures has no place in the 21st century.	3.4
40	Greenhouse emissions – global effects	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.	3.4
157	Greenhouse emissions – global effects	Coal fired power stations are Australia's biggest source of greenhouse pollution, fuelling runaway climate change. The two proposed new coal fired power stations in NSW (one at Bayswater in the Hunter Valley and the other at Mt Piper near Lithgow) would increase NSW annual greenhouse pollution by 20%. That's a lot. This would drive runaway climate change, which is already driving	3.4

Submission number	Issue	Submission details	Response
		species to extinction and killing an estimated 300,000 people per year. NSW is hooked on coal. It's time to wake up to the climate crisis and scrap these ridiculous proposals.	
100	Greenhouse emissions – global effects	Coal fired power stations continue to use o power source that is killing the earth with excessive CO2 emissions and must be stopped immediately. The emissions being given off by this power station are already very high and this expansion will only make the situation worse.	3.4
106	Greenhouse emissions – global effects	Coal fired power stations produce too much greenhouse gas per kilowatt hour	3.4
149	Greenhouse emissions – global effects	Coal is at the root of climate change and it is completely irresponsible, unnecessary and utterly dangerous for this project to proceed. Effect on climate must be a key determining factor in any decision on new or augmented electricity generation.	3.4
42	Greenhouse emissions – global effects	Coal or gas fired power plants represent a significant threat to the global environment and humanity that resides within it due to the widely accepted understanding of global warming and the less well known but equally drastic scenario of ocean acidification, which like global warming, is occurring as this is written. on that basis, the planned power plant at Mount Piper should be revamped as a potential location for a base load renewable energy generator or scrapped completely.	3.4
102	Greenhouse emissions – global effects	Coal power stations are the single greatest threat to the climate and there is no longer any doubt that we need to be acting quickly to reduce the severity of climate change not push ourselves further into it.	3.4
27 & 38	Greenhouse emissions – global effects	Departments need to start somewhere to do with climate change. I think it should start with Mt Piper Power Station. Kevin Rudd talks about climate change so he needs to put his money where his mouth is.	3.4
94	Greenhouse emissions – global effects	Environmental impacts: in addition to the very substantial carbon dioxide output of this proposed power station, which will contribute to increasing the CO2 concentration in the atmosphere, and thence with a high degree of probability to consequential climate change, there are other concerns.	3.4
155	Greenhouse emissions – global effects	Environmental impacts: in addition to the very substantial carbon dioxide output of this proposed power station, which will contribute to increasing the CO2 concentration in the atmosphere, and thence with a high degree of probability to consequential climate change, there are other concerns.	3.4
95	Greenhouse emissions – global effects	Have read the environmental assessment in relation to greenhouse gas emissions of the proposed development and am very disturbed to see that the 10 Mt of HGH is seen as acceptable in light of the high cost to the environment, our future and well being from dangerous climate change.	3.4
152	Greenhouse emissions – global effects	How does building a new coal fired power station help us lower our carbon emissions? Building another coal power station is in direct conflict with our country's long term interests and needs.	3.4
110	Greenhouse emissions – global effects	I am concerned to see plans for a further extension to NSW's fossil fuel based power generation. The NSW Government has indicated its desire to take serious steps to address the issue of climate change. I am not an expert on climate science nor in the technical issues surrounding the claim made for 'clean coal', though I do understand that this technology has not yet been demonstrated to work, and this	3.4

Submission number	Issue	Submission details	Response
		proposal makes little or no provision for this technology in any case. Burning more coal to supply an ever greater demand for electricity is a classic case of fooling ourselves into avoiding difficult decisions. There may seem to be no other alternative. Coal is cheaper, electricity is needed. But we blind ourselves to a whole range of assumptions hidden behind these obvious claims. First, that our society requires an every increasing supply of electricity, rather than learning to reduce our consumption and rejoice in greater simplicity. Second, that coal is cheap. It is only cheap when we ignore the long term climate and ecological costs of this unsustainable practice. Our frame of reference is too small. Let us take this opportunity to widen our vision and reject assumptions that are only making our collective problem worse.	
158	Greenhouse emissions – global effects	I take exception of the reporting where it states that the Mt Piper extension will only add a handful of percent to current energy emissions. It may be true but the NSW Government has other new power station proposals, which will add a few more percent and no doubt a similar story is seen in other states. NSW and Australian Government policy is directed at reducing emissions. Any increases must be assessed in the context of other power station proposals.	3.4
121	Greenhouse emissions – global effects	I urge the Planning Department to more fully consider the serious and life threatening nature of increasing carbon concentrations in the atmosphere. I find it ludicrous that the NSW Department of Environment, Climate Change and Water 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. If members of the NSW government took 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.	3.4
143	Greenhouse emissions – global effects	I urge the Planning Department to reconsider the NSW Government's proposal to expand our reliance on fossil fuels for base load power supply. People across NSW are looking for action and leadership to decrease our carbon dioxide emissions and to start drastically reducing our contribution to global climate change. It is unacceptable that the Department of Planning is considering expanding our reliance on coal power. The negative and life threatening impacts of climate change are inextricably linked to the burning of fossil fuels for power generation. This practice needs to stop.	3.4
156	Greenhouse emissions – global effects	If the government approves this application then it will have made a long term commitment to technology which exacerbates climate change and is very expensive to fix up. And it will further increase the conflict of interest between the power station owner and the community objectives of cutting emissions, with resultant risk of future taxpayer funded buyout.	3.4
113	Greenhouse emissions – global effects	In this critical time of climate change and the urgent need to rethink the way we generate and use energy, this proposal is an insult to all concerned Australians.	3.4
39	Greenhouse emissions – global effects	It is clear from the many thousands of scientific reports that coal, and its uses, is contributing to the undeniable global climate changes. It is time our decision makers had the courage to truly represent the needs and wishers of average people and stand up to the greedy and disproportionately wealthy coal industry	3.4
114	Greenhouse emissions – global effects	It is clear that the coal industry is racing to introduce new coal dependent infrastructure before greenhouse gas emissions measures rightly curb our coal consumption.	3.4
108	Greenhouse	Just want to know why the government is even contemplating another coal fired power station. Every night on the news we hear about the	3.4

Submission number	Issue	Submission details	Response
	emissions – global effects	dreadful effects of climate change on the environment and on us the people but government still continue to be part of the problem and not reach to long term solutions.	
58	Greenhouse emissions – global effects	Knowing that climate change is going to devastate our environment, it would be immoral to actually build new fossil fuel power plants.	3.4
126	Greenhouse emissions – global effects	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 of avoiding the tipping points to runaway climate change.	3.4
200	Greenhouse emissions – global effects	National, State and Local emissions would be adversely targeted.	3.4
28, 34-37, 61, 66, 67, 70, 79, 80, 116, 147, 154, 159,	Greenhouse emissions – global effects	New coal or gas fired power stations would drastically increase NSW greenhouse pollution, by as much as 20%.	3.4
202	Greenhouse emissions – global effects	New power stations put the world at risk	3.4
199	Greenhouse emissions – global effects	New power stations put the world at risk. A dramatic reduction in greenhouse gas emissions from the electricity sector, not the drastic increase that such a power station would create.	3.4
132	Greenhouse emissions – global effects	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 C02 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. 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 C02 emissions before climate change tipping points occur. A 'Dry-Fired' power plant produces unacceptably more (5%) C02 emissions than the existing power plants. Carbon Capture and Storage (CCS) is estimated to increase water use in power stations by around 18%.	3.4
233	Greenhouse emissions – global effects	Pollution must begin to fall immediately in NSW. New fossil fuel power stations in NSW are counterproductive.	3.4
111	Greenhouse emissions – global effects	State governments have promised to cut greenhouse gas emissions. Building a new coal fired station won't do this. This new facility will last a long time. It extends the coal generation of energy by the period of its lifetime.	3.4
74	Greenhouse	The carbon emissions that would be emitted from the proposed power station are unacceptable and would directly contribute to climate	3.4

Submission number	Issue	Submission details	Response
	emissions – global effects	change. Our lives will increasingly be adversely affected by climate change unless countries like Australia stat to clean up our act. 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 plans for the Mt Piper extension.	
212	Greenhouse emissions – global effects	The coal option will emit 4 million tonnes more greenhouse gases than the gas option.	3.4
119	Greenhouse emissions – global effects	The cost to the community of coal in terms of the environment and human health mean it is not the best long term solution. Communities around the world are already grappling with the impacts of climate change. Eg: severe droughts, increased number of fires and storms, rising sea levels etc. The government needs to be accountable for its decisions, and a decision to expand the number of coal fired power plants will increased NSW greenhouse gas emissions by up to 20%. This will have untold negative impacts on the communities of the Hunter and beyond for a long time.	3.4
78	Greenhouse emissions – global effects	The Earth is in a time of crisis, where we have an extremely limited time to act on climate 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 publically stated that Australia should seek to keep global temperature increase to no greater than 2 degrees celsius. 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.	3.4
105	Greenhouse emissions – global effects	The extension of the Mt Piper power station is a complete disregard of the government's stated position on taking action against climate change. Every day we hear of the disaster the world will face if governments continue to avoid the hard decisions about reducing greenhouse gases and this government continues to make 'dinosaur decisions', easy but without vision for a low carbon future. As individuals many of us have taken expensive action privately to reduce our carbon footprint, while the government proceeds with 'business as usual'. It is dishonest and its leaving the electorate in despair.	3.4
156	Greenhouse emissions – global effects	The Federal and State governments have both acknowledged the reality of human induced climate change, and the need to cut emissions. The EIS appendix entitled 'Greenhouse gas assessment' also acknowledges this. This development, either with USC or CCGT, would cause a substantial increase in greenhouse gas emissions – as per the EIS summary on page 9. Therefore it should be rejected. To do otherwise when alternative methods of generating power are available is to neglect your duty. We disagree with the proposition that, because Australia is a relatively minor emitter, what we do does not matter. In 6 weeks, Australia will be participating in the Copenhagen conference. Our moral authority and our ability to actually persuade other nations to take action will be fatally compromised if we, the world's largest per capita emitter nation, are actually planning to increase emissions.	3.4
76	Greenhouse emissions – global effects	The impact on greenhouse gas emissions which will raise the total NSW emission by approximately 25%, when we should be achieving 25-40% reductions. NSW Government is requested to put legislation in place to prevent the establishment of any new fossil fuelled power station without the shut down of double the level of emissions that it will generate.	3.4
209	Greenhouse emissions –	The Mt Piper and Bayswater power stations each will have a 2,000 MW generating capacity. If they are coal fired, combined they will produce around 22.6 million tonnes of C02 each year. This would be approximately a 14.1% increase in NSW emissions, or the equivalent	3.4

Submission number	Issue	Submission details	Response
	global effects	of around five million new cars on the road. A little less than half will be generated by the new Mount Piper power station. If the proposed power stations are built, the Rees government's State Plan objective of returning emissions to year 2000 levels by 2025 will be unachievable. NSW would be unlikely to achieve its share of the Federal government's 20 percent renewable energy target. Constructing fossil fuel power stations runs contrary to the clear desire of the majority of people in NSW for governments to take strong action on climate change. It is incompatible with the large and rapid reduction of C02 emissions that the NSW government has acknowledged are required. It is unconscionable considering government advertising and programs encouraging individuals to make efforts to reduce their own carbon footprints. While the Rees government maintains that they are 'neutral' over the choice of fuel between coal and gas, increases in the international price for natural gas, the inevitable construction of a gas export terminal on the east coast of Australia, new coal exploration licenses and an ineffective Carbon Pollution Reduction Scheme mean that these generators are highly likely to be coal-fired. Despite media reporting that the NSW Premier has signalled that these plants will be gas fired and not coal, there has been no change to the project applications to reflect this position. Even if gas is used as the fuel for Bayswater, Mount Piper and the Munmorah expansion, the state's C02 emissions will be increased by approximately 7%. The EAs for these projects fail to adequately represent or address the potential environmental impacts of the emissions from these projects. By starting from the perspective that new fossil fuel base load generation capacity is required, they have not considered the alternative emission free generation technologies available. Since the release of the Owen report NSW has approved over 1250 MW of wind projects with another 1470 MW across 5 projects currently proposed. NSW has one demonstration solar thermal project and is planning to introduce a solar feed-in tariff in 2010. Any new generation investment in NSW should be directed to expanding the development and construction of emissions-free projects.	
101	Greenhouse emissions –	The NSW government has stated it wants to act on climate change and lower the state's emissions. How can this be reconciled with burning more coal to make electricity?	3.4

Submission number	Issue	Submission details	Response
	global effects	Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive rates'. When the climate scientists of the world are warning of dangerous levels of carbon emissions, the 'best means of supplying electricity' should be based on environmental and sustainable rationale. Climate change is a scientific fact and every needs to be made to lower, not raise carbon emissions.	
107	Greenhouse emissions – global effects	The NSW government has stated it wants to act on climate change and lower the state's emissions. How can this be reconciled with burning more coal to make electricity? Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive rates'. When the climate scientists of the world are warning of dangerous levels of carbon emissions, the 'best means of supplying electricity' should be based on environmental and sustainable rationale. Climate change is a scientific fact and every needs to be made to lower, not raise carbon emissions.	3.4
131	Greenhouse emissions – global effects	The NSW government has stated it wants to act on climate change and lower the state's emissions. How can this be reconciled with burning more coal to make electricity? Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive rates'. When the climate scientists of the world are warning of dangerous levels of carbon emissions, the 'best means of supplying electricity' should be based on environmental and sustainable rationale.	3.4
96, 98	Greenhouse emissions – global effects	The NSW government has stated it wants to act on climate change and lower the state's emissions. How can this be reconciled with burning more coal to make electricity? Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive rates'. When the climate scientists of the world are warning of dangerous levels of carbon emissions, the 'best means of supplying electricity' should be based on environmental and sustainable rationale.	3.4
118, 130	Greenhouse emissions – global effects	The NSW government has stated it wants to act on climate change and lower the state's emissions. How can this be reconciled with burning more coal to make electricity?	3.4
115	Greenhouse emissions – global effects	The proposal to expand the Mt Piper power station is flawed because it will result in a large increase in greenhouse gasses at a time when we need to bring them down to restore Arctic sea ice and prevent run away climate change.	3.4
68	Greenhouse emissions – global effects	The world is facing absolutely critical crisis with global warming. All the credible science is unequivocal – the world is heating up and this is human induced. We must act now to reduce emissions – the window of opportunity to avert climate disaster is rapidly closing.	3.4
117	Greenhouse emissions – global effects	There is a continuum of scientific opinion as to the scale and timing of severe global warming onset. At the conservative end there is the government constrained consensus view of the IPCC, while at the more server end are assessments such as those of Dr James Hansen's team at NASA, Britain's Met Office Hadley Centre, and lone researchers such as James Lovelock. While there is a range of view, what is common to all assessments is that we urgently need to reduce CO2 emissions, and the emissions curve must start trending down in the next decade at the very latest, preferably by 2015. Among well informed scientists a reduction of 40% by 2020 is considered the bare minimum required, any advocate much more dramatic cuts. Any reasonable survey of current climate change literature makes it clear that without rapid and dramatic emission reductions a	3.4

Submission number	Issue	Submission details	Response
		catastrophic future awaits us. As such the days of business as usual, looking for the cheapest solution to any problem, are over: we must now base decisions on the best climate change science available and spend what is needed to really avert the worst consequences of climate change.	
59	Greenhouse emissions – global effects	This is terrible for climate change and the environment and completely unnecessary.	3.4
104	Greenhouse emissions – global effects	This project is not showing leadership when it comes to addressing climate change. Power stations as you know have a long life so the impact of the extension on the environment will have a protracted environmental impact.	3.4
207	Greenhouse emissions – global effects	Urgent international action is required to address climate change.	3.4
153	Greenhouse emissions – global effects	We need to take action now to combat climate change. This is just ignoring the problem.	3.4
48	Greenhouse emissions – global effects	What you few people do has health, economic and survival implications for all of us. Are you as individuals really going to act against the best advice of scientists worldwide and jeopardise the plant – because this is what your plan involves.	3.4
71	Greenhouse emissions – global effects	While I acknowledge the growing Australian population and the fact 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 that 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.	3.4
97	Greenhouse emissions – global effects	With compelling and almost unanimous scientific evidence of man-made global warming and the catastrophic damage which is soon likely, why are you building more coal fired power stations? You have no excuses as public servants and politicians for implementing this clearly immoral policy.	3.4
136	Greenhouse gas emissions - global effects	A 'Dry-Fired' power plant produces unacceptably more (5%) C02 emissions than the existing power plants. 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 C02 emissions before climate change tipping points occur.	3.4
140	Greenhouse gas emissions - global effects	How is expanding a coal mine helping achieve the government's aim to reduce carbon emissions? It will increase them dramatically.	3.4
30	Greenhouse gas emissions - global effects	New coal power stations will vastly add to our greenhouse emissions. 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.	3.4
33	Greenhouse gas	Regardless of the way that the Federal Government or Opposition might portray the CPRS, or the way they have designed it to operate,	3.4

Submission number	Issue	Submission details	Response
	emissions - global effects	we must remember that the object of international activity on climate change is to reduce carbon emissions. If Australia, or NSW, wish to be taken seriously in Copenhagen, and intend to negotiate with other countries who are making genuine efforts to reduce their emissions, then it is inconceivable that they can be doing anything that will actually increase emissions, such as building new fossil fuel burning power stations. Under CPRS these emissions may be offset by gaining credits in other countries, under the guise of helping them cut their emissions. However, the methods commonly proposed – stopping deforestation, do not actually reduce emissions at all – for this it is necessary to plant new forest. Considering that we have cleared so much of our won forest, there is no better place to start reforestation then at home, and it would be significantly closer to the source of CO2 it is supposed to absorb. It is besides highly immoral to try to make less developed countries take action on emissions when it is our society that has produced, and continues to produce the bulk of them. With this proposal, the NSW government is making a laughing stock of Australia, and the laughter is already resounding in the board rooms of the Coal Industry. In addition, it is exposing us to years of liability under the global scheme that will one day cause us to pay not just for our ongoing emissions, but fine us for the emissions we are producing so carelessly now.	
31	Greenhouse gas emissions - global effects	The emissions of coal fired power stations are a major contributor to green house gas emissions and global warming. The world's glaciers and ice regions are rapidly melting. This melting of glaciers and polar regions is leading to rising sea levels. Rising levels of greenhouse gases are also causing the oceans to become more acidic, which badly affects corals and other hard shelled creatures.	3.4
32	Greenhouse gas emissions - global effects	The future of my generation depends on humanity getting the planet dealing effectively with stopping climate change – which means getting back to a safe climate zone. To do this, we need to be producing zero emissions; taking carbon out of the atmosphere using carbon sequestration methods such as biochar; and physically cooling the planet using geo-engineering, which includes reafforestation, restoring phytoplankton and possibly injecting sulphates into the atmosphere. A target of 450ppm is grossly unfeasibly and the reality is that while you soothe the public that this is safe, you actually plan to put out a target of 550ppm (3 degree rise). Either of these targets will doom humanity to a catastrophe – a very brief outline includes rising sea levels displacing millions of refugees, water and food shortages, increased droughts, floods and natural disasters and mass species extinction in the order of 15-37%.	3.4
138	Greenhouse gas emissions - global effects	The production of electricity from coal fired power stations is already a major contributor to climate change. To increase the production is completely irresponsible.	3.4
258	Greenhouse gas emissions – global effects	Both coal and gas create greenhouse gases that contribute to climate change.	3.4
77	Heritage – Cultural	I have since discovered that the archaeologist submitted a Cultural Heritage Assessment for the Mt Piper Power Station extension in September 2009, although I have not received a copy from the company. We do not accept the methodology for the assessment, provided to SKM and exhibited on the DoP's website on 25/09/09, as it is not in line with international, national and State law and guidelines relating to cultural heritage. As you would be aware, many Aboriginal people take the position that sovereignty over our lands has never been ceded. We Wiradjuri people take this position and believe that we should be involved in all aspects of activities that affect our Country, Mt Piper lies within Wiradjuir Country.	3.19

Submission number	Issue	Submission details	Response
22	Information Quality	Fault in the EA report. Section 2.6 – the claim that the new plant will reduce the carbon intensity of the NSW electricity supply. This is probably true but of miniscule extent. Why doesn't the report tell us the GHG intensity of the CCGT and USC options?	3.9
62	Information Quality	Figure 2.3: this shows a summer peak demand of 16750 MW in 2018/19. Given the government's target of 20% from renewable by 2020, and that the current level is only 6% of 16000, that implies and additional 1385 from renewable. That almost meets the anticipated shortfall of 1450.	3.9
62	Information Quality	Omissions from EA: the impact assessments 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 for one power station is minute, it affects the whole world. In the Kingsnorth UK protestors' trial, Professor Jim Hansen, one of the world's leading climate change scientists, told the court that, of the expected species extinctions, the share corresponding to 20,000 tonnes of carbon dioxide emitted daily is around 400 (http://www.guardian.co.uk/environment/2008/sep/11/activists.kingnothclimatecamp). and easy to use model, C-ROADS (http://climateinteractive.org/simulations/C_ROADS/overview) is available for such purposes.	3.9
77	Cultural Heritage	On 25/09/09 the DoP began an online exhibition for public submissions on the New Base Load Power Station Mount Piper Extension Project. I have not been informed of this officially in writing, only discovering this proposal is on exhibition through a friend. On 20/08/09, the archaeologies assigned for the Aboriginal Cultural Heritage section of this project, wrote to me as a registered Aboriginal stakeholder to review the methodology for the Cultural Heritage Assessment by 10/08/09. I did not receive this letter until early September 2009. Given the very short notice, I was only able to confirm to the archaeologist that I and another relative, Mitchell Cutmore, were Aboriginal stakeholders with an interest in this project.	3.19
62	Information Quality	Owen Inquiry Report: The proposal documents make repeated reference to the report of the Owen Inquiry. However, no link is provided to that report, and it is no longer available on the Premier's website. This makes it inappropriately difficult to verify the accuracy, relevance and reliability of the references.	3.9
62	Information Quality	Section 2.1.3: 'The NSW Energy Reform Strategy of March 2009 noted…that coal fired generators will still be expected to play a crucial role in both the NEM and NSW'. While that is true, it does not follow that production from such sources will need to increase. The quote is therefore misleading in the context of 'strategic direction'.	3.9
62	Information Quality	Section 2.2.1: 'CCGTs.. have higher fuel costs [than coal-fired generators]'. It is puzzling that no numbers are quoted here. Given that a CPRS is likely to put a higher impost on coal than gas, the actual fuel cost differences are critical.	3.9
62	Information Quality	Section 2.2.2: 'intermittent nature of supply in relation to… solar thermal'. False. Solar thermal with molten salt storage has been demonstrated (Andasol, http://www.flagsol.com/andasol_projects.htm) to prove base load.	3.9
156	Information Quality	The application leaves open the option of either gas or coal. Because of the large differences in emissions, the application should specify which option is proposed.	3.9
77	Cultural Heritage	The archaeologist's proposed methodology for the power station extension project involved a site inspection. However, the company stated in its letter to me of 20 August 2009, that "due to safety and access considerations and the disturbed nature of the site, Aboriginal	3.19

Submission number	Issue	Submission details	Response
		representatives will not be invited to accompany archaeologists on the initial site inspection. However, if archaeological sites are identified within the study area then representatives from the Aboriginal community will be invited to inspect the site." According to the archaeologist's report of September 2009, page 11, "No Aboriginal sites have previously been recorded or listed as occurring within the Mt Piper Power Station extension study area." Also that "No Aboriginal objects or potential archaeological deposits (PADs) were located during the 2009 field inspection." Although Aboriginal sites have been located quite close to the area as indicated in Appendix D: Heritage to the Environmental Assessment for the Coal Uploader project. We do not accept that 'safety and access considerations and the disturbed nature of the site' meant that we, the Traditional Custodians of the Country should be excluded from undertaking a field assessment of the area. Aboriginal sites can still have significance even if disturbed. We know from experience that Aboriginal artefacts can be located on, or below, disturbed sites, particularly by Aboriginal people with many years of experience in and knowledge of their own culture. It is understood that employees or contractors to the archaeologist undertook fieldwork relating to this project in 2005 and 2009. The September 2009 Cultural Heritage Assessment report to SKM was prepared. No details about whether any of these people are Wiradjuri people with bloodlines to Country or what their qualifications or experience cover are included in the report to SKM. We wonder how 3 women, presumably archaeologists are allowed to make a field assessment, yet Aboriginal people with considerable cultural knowledge and experience are excluded from this arrangement. According to page 2 of the archaeologist's letter to me of 20 August 2009, "prior to the establishment of the existing Mount Piper power station, much of the site had been used as a series of open cut coal mines. Most of the landscape within the existing power station perimeter, including the areas that will be impacted by the extension proposal have been heavily disturbed and reworked as a result of previous mining and construction activity up to the present date. No Aboriginal sites have previously been recorded or listed within the Mount Piper Power Station study area." Research of the DoP's website shows that in 2007 the same archaeologist and an Aboriginal Site Officer from the Bathurst Local Aboriginal Land Council were involved in a cultural heritage assessment for the Western Rail Coal Uploader at Mt Piper power station (Application 06_0271). This study area is located at Piper's Flat about 3 km from the power station. Appendix D Heritage to the Environmental Assessment for the Coal Uploader project describes the Aboriginal Context in part as follows: "The study area falls within a larger areas which was, at the time of European settlement, inhabited by members of the Wiradjuri linguistic group, and which falls into the tribal area delineated by Tindale (1974) as "Wiradjuri". The territory extends from Dubbo and Bylong in the north to Tallangatta in the south, and west from Lithgow to the Hay Plain and Ivanhoe… Wiradjuri territory extended into 3 general physiographic regions: the highlands (central tablelands) in the east, the riverine plains in the west and the transitional western slopes zone in between (White 1986:39). The rail loop and conveyor or study area is located in the central tablelands section. Early explorers noted the presence of Aboriginal people throughout the Blue Mountains by the fires apparently deliberately lit across the area (Gorecki 1982). Ethnographic and archaeological evidence indicates that a small population inhabited the high plateaux, probably during the warmer months of the year, for at least 12,000 years (Johnson 1979 in Gorecki, 1982). The Archaeologist and Bathurst LALC discovered Aboriginal cultural heritage at Pipers Flat. One recommendation in Appendix D stated: "Consultation should continue with the relevant Aboriginal community groups and representatives should be invited to participate in any further archaeological assessments that are conducted in relation to the Pipers Flat project. The methodology for the Mt Piper Power Station does not follow the stages for consultation set out in community consultation	

Submission number	Issue	Submission details	Response
		protocols such as the former Australian Heritage Commission's "Ask First (2002), Community Cultural Development NSW (CCDNSW)'s 'Respect, Acknowledge, Listen (2003), or DECC's 'Applicants and Aboriginal Cultural Heritage Draft Community Consultation Requirements for Proponents (May 2009). As far as we know no meeting has been held that presents the scope of the proposed power station extension project and the proposed approach as set out in Stage 2 of DECC's May 2009 draft consultation requirements, yet we have already been asked to provide cultural information about the study area in writing. It is impossible to do this without having been involved in a proper site inspection. Also from experience we know that certain archaeological firms lack sympathetic understanding and knowledge about Aboriginal cultural heritage and sites. Some archaeological firms that do not employ Aboriginal staff can underestimate or omit the significance of our Country. Aboriginal sites can have cultural and social significance even if they are disturbed and may be part of a wider area or areas of sites or places that only Aboriginal people with specialised cultural knowledge can ascertain. The methodology used for the Mt Piper Power Station extension has excluded Wiradjuri people with authority and is not in the spirit of the United Nations Declaration on the Rights of Indigenous Peoples, particularly Articles 11 to 13 (Articles provided in submission). We believe that there should be an urgent meeting of Aboriginal stakeholders in the Mt Piper Power Station extension project so that an appropriate, inclusive methodology and onsite inspection can be agreed with the project proponent, the DoP, DECC and the archaeologist. This would be on step in ensuring that the spirit of 'Ask First' and other government consultation guidelines that put an emphasis on partnerships between Aboriginal and non-Aboriginal peoples involved in development projects is followed. It is our view that it is up to Aboriginal communities to choose their representatives and how they will be involved in development projects. While some Aboriginal Elders may not wish to participate in field surveys and provide cultural heritage information either orally or in writing, we do not agree with DECC, as set out in Aboriginal Cultural Heritage Draft Community Consultation Requirements for Proponents (May 2009) page 7, that 'consultation should not be confused with employment. Aboriginal people have long been calling for payment for their involvement in cultural heritage matters. CCDNSW's 'Respect, Acknowledge, Listen' puts this very well on page 13: "For too long it has been assumed (and it often still is) that Indigenous people will participate and work for nothing. Indigenous people are the owners and hlders of their culture and knowledge. They are the only ones and appropriate ones who have the knowledge, expertise and permission to work in, with and pass on their culture. In western culture, specialised knowledge is not something that is given away for free. If an Indigenous person chooses to work with you in any capacity ie; in giving a dance performance, giving a speech, a talk or traditional welcome, doing or participating in the artwork or project etc it is appropriate that they be paid for their time, expertise and knowledge, just as it is for any other artist or professional.' This protocol document also describes Indigenous involvement very well on page 14: ' In working with the Indigenous community and on Indigenous projects it is vital to have Indigenous involvement throughout the project eg: as curators, staff, project officers, artists, advisory group… Any project should also have allocated payment within its budget to employ and involve Indigenous workers from the community. You should also seek to involve Indigenous decision makers wherever possible.' We also request a meeting be held as soon as possible of the stakeholders in the Mt Piper Power Station extension project mentioned previously to discuss the Cultural Heritage Assessment for the project. We also request that Aboriginal stakeholders accompany archaeologists on a new field study, to be conducted on foot, for the	

Submission number	Issue	Submission details	Response
		project and that the Aboriginal representative be employed and paid for their involvement. This payment would include working conditions and payment as agreed upon with the proponent but would include at least reasonable hours, a daily fee, accommodation, mileage allowance, meal allowance and incidentals.	
75	Information Quality	The contractual arrangements between Delta and Centennial Coal for the water transfer scheme should be examined to see if adverse incentives that would facilitate the destruction of water aquifers so as to provide water for Delta Electricity's needs.	3.9
156	Information Quality	The EIS appendix entitled 'Greenhouse gas assessment" section 3.4.3 refers to a report indicating that 'CCS would not be available until 2020. Therefore, additional fossil fuel power is clearly incompatible with a 2020 emissions reduction target. The relevant report has been removed from the government website. We suggest that in fact the Connell Wagner report indicated that CCS would not be available before 2020, but did not predict that CCS would be available by 2020. No evidence, plan or costing has ever been publicly produced in the EIS, by Connell Wagner or by anyone else to give any confidence hat CS will ever be commercially available, let alone available by 2020.	3.9
127	Information Quality	The Environmental Assessment Executive Summary states within the first pages that the village of Blackmans Flat is some 3 km from the existing power station. This is incorrect and dishonourable. As the crow flies the distance of the existing eastern boundary is a mere 1 km not 3km. it is also noted that Figure 1 Region location, Executive Summary page 2 does not acknowledge this village.	3.9
119	Information Quality	The Environmental Impact Assessment does not properly account for true cost of the new power station.	3.9
156	Information Quality	This submission does not present any costing, let alone a costing which addresses the CCS cost aspects provided in this submission.	3.9
62	Information Quality	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 plant station can and should be deferred for 12 months; that a feasibility study into emulating and scaling up the Spanish Andasol project should be commenced forthwith. We are also concerned that the decision to reject gas in favour of coal on the basis of fuel cost does not appear to have factored in the cost of carbon pollution permits. Section 2.1.2: 'it could be postulated that electricity projection could return to levels indicated in the 2008 ESOO'. It would be more logical to postulate only that the rates of increase will return to those indicated in the 2008 ESOO. The economic downturn, which many pundits assert is not over, will have at least delayed the profile by a year.	3.9
196	Noise	Coal trains travelling through urban areas 8 times during a 24 hour period.	3.10
164	Noise	Electric motors and air drafts from fans and duct work generate considerable amounts of noise. Because of Mt Piper's location on a hill, this noise is likely to be carried by wind and convection currents in a SE direction towards sensitive residential receivers in Blackmans Flat, Castlereagh Highway and View Street areas in particular.	3.10
144	Noise	For Blackmans Flat residents this will mean significantly higher noise levels 24 hours a day, 7 days a week, because dry-cooled plants are much noisier.	3.10
135	Noise	It is widely recognized that the proposed dry-cooling system will be far noisier than the wet cooling system currently used at Mount Piper Power Station. This is because the electric motors and air draft from the fans does generate a considerable amount of noise. Because of Mount Piper's location on a hill, this noise is likely to be carried by wind and convection currents a long distance towards in a SE direction towards sensitive residential receivers in the Blackmans Flat, Castlereagh Highway and View Street areas in particular.	3.10

Submission number	Issue	Submission details	Response
		This issue of increased noise issue must be addressed at the planning stage, because these residential receivers through no fault of their own are already exposed to a huge range of cumulative noise impacts from the existing Mt Piper Power Station, the coal stockpile, fly-ash repository, and associated open-cut mines, blasting, coal-fines plants, and coal transport.	
144	Noise	It is widely recognized that the proposed dry-cooling system will be far noisier than the wet cooling system currently used at Mount Piper Power Station. This is because the electric motors and air draft from the fans does generate a considerable amount of noise. Because of Mount Piper's location on a hill and above the Blackmans Flat valley, this noise is likely to be carried by wind and convection currents into that valley, and a long distance in a SE direction towards sensitive residential receivers along the Castlereagh Highway and the View Street area. This issue of increased noise must be addressed at the planning stage, because Blackmans Flat residents in particular, through no fault of their own, are already exposed to a huge range of cumulative noise impacts from the existing Mt Piper Power Station, the coal stockpile, fly-ash repository, and associated open-cut mines, blasting, coal-fines plants, coal transport, and soon a Regional Garbage Tip.	3.10
360	Noise	Noise from building the coal loader at Kangaroo Island keeps us awake at night.	3.10
375	Noise	Noise from building the coal loader at Kangaroo Island keeps us awake at night.	3.10
144	Safety	The Material Safety Data Sheet (MSDS) for Carbohydrazide says "Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment" and "Do not allow to enter sewers or watercourses" So where do these 10 truckloads a year end up? Blackmans Flat is no longer a safe place to live, and no longer fit for human habitation. The Dept of Planning and Lithgow Council created this situation. The residents must be bought out and compensated,	3.11
114	Safety	Train movements close to school zones as the railway tracks are close to school areas and parks. There is a lack of safety barriers at crossings.	3.11
94	Site rehabilitation	How will the site be rehabilitated at the end of its economic life (which is certain to be finite since in the longer term it will become uneconomic to ship fuel to it)? The financial provisions for end of life rehabilitation need to be disclosed.	3.5
177	Social	Children and grandchildren who are going to inherit the mess.	3.12
90	Social	Once construction is completed, 50 additional jobs will be created from the Mt Piper upgrade. Coal is not providing large numbers of jobs in regional communities and employment in renewable energy infrastructure would provide a comparable number of local jobs.	3.12
191	Social	The failure to implement renewable sources for power signals a profound dereliction of the duty of government to care for us, the people and out future generations.	3.12
27 & 38	Social effects	Lithgow City Council is submitting a strong case for the Mt Piper Power Station to be run on coal. I feel that the Council has an agenda because a lot of those councillors work in the coal industry. They are not thinking of the environment at all. All they worry about is losing jobs.	3.12
157	Social effects	We support the motions of the Muswellbrook Shire Environment Committee and their opposition to the construction of any coal fired power stations without the inclusion, from formation, of a fully integrated and operational CCS system. Members of the Muswellbrook Shire Environment Committee, as do people right across NSW, that there is no such thing as clean coal. We share the concerns about the short to long term impacts of Bayswater B community 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	3.12

Submission number	Issue	Submission details	Response
		displacement of full time permanent positions, provision of health, education and social order.	
146	Social effects	What we need politically is a localised solution for our energy needs, far from a centralised form of govt that decides what is good for us. Localised authority based on a simpler way of life. The great national ongoing tragedy that we suffer from is that there are still more than 10 million people employed in positions that take them away from family life and from being in touch with their local community. The solutions are local and those solutions can be found in permaculture. You talk of jobs, while you ignore the great social consequences of alienation. We don't need more electricity and we no need less politicians, hooked into a belief system that is systematically destroying this planet.	3.12
146	Social effects - health	Recently I had been considering purchasing some land in Lithgow, with a view to building a house. If this goes ahead, I most certainly will not do so. I have my children's health to consider. Why is the govt not considering our health? I live in the mountains to breathe fresh air. It is time you boles realised that it is not just a climate change issue but a quality of life issue as well. We evolved on clean air, not polluted air.	3.12
1	Social effects - Health	The proposed expansion of the coal-fired power stations would exacerbate existing environmental and human health issues in the communities surrounding the power stations and the coal mines that feed them.	3.12
6	Social effects – health	Climate change is already killing people all over the world including Australia. Building new fossil fuel power stations and continuing to allow existing ones to operate means that NSW government is indirectly responsible for the thousands of deaths already caused by climate change.	3.12
204	Social effects – health	Concern for children's health amongst pollution.	3.12
166	Social Effects – health	Exacerbate environmental and human health issues in surrounding communities due to increased air and water pollution.	3.12
172	Social Effects – health	Need to ensure health, safety and welfare of those affected by Delta's activities.	3.12
256	Social effects – health	The government is reversing the effect that some individuals are trying so hard to reduce.	3.12
132	Social issues	Centralising power sources actually decrease power security. It will be vulnerable to both future water shortages and possible terrorist attack. It is definitely not a secure option.	3.12
136	Social issues	Centralising power sources actually decrease power security. It will be vulnerable to both future water shortages and possible terrorist attack. It is definitely not a secure option.	3.12
144	Social issues	The residents of Blackmans Flat will once again bear the major impacts of this proposal. This is on top of the massive cumulative impacts from industry that the NSW Department of Planning and Lithgow City Council have already dumped on this community over the last 4 years. I would have thought that dumping highly offensive projects like a Regional Garbage Tip, 4 open-cut mines, an expanded power station ash & brine dump, 2 coal-fines briquette plants, and massive coal transport impacts would have been enough for one small community to bear. But no, here we go again, you will almost double all those impacts and once again lie that the impacts can be managed. Corruption is a terrible thing. The Environmental Assessment falsely claims that this proposal is 3 kilometres from Blackmans Flat. A quick glance at any map or Google Earth clearly shows that Blackmans Flat township is just 2 kilometres from the existing Mt Piper Power Station smokestack, and just 1	3.12

Submission number	Issue	Submission details	Response
		kilometre from Mt Piper Flyash repository. This is far too close to safely manage the traffic, noise, dust, and emission impacts of a 45% increase in the size of Mount Piper Power Station from 1400 MW to 2000 MW. The West Australia EPA recommends that based on the impacts of Gaseous Emissions (NOx, SOx), Noise, and Dust, an Electric Power Generation plant should have a Separation (Buffer) Distance of 3000 - 5000 metres to sensitive land uses. Blackmans Flat is just 2000 metres and the Fly-ash Repository just 1000m. It is highly misleading, socially irresponsible and corrupt for the EA to claim that doubling coal-fired generation just 2 km from Blackmans Flat, plus doubling ash and brine waste produced just 1 km from our town, plus doubling coal mined and transported only metres from our homes, will have a minimal impact on local residents. The separation distances are totally inadequate. All homes in Blackmans Flat must be purchased, and residents adequately compensated. 8 homes were bought when Mt Piper approved in 1982. It's now time to buy the rest. This proposal will rely heavily on coal from outside the region via Delta's Western Coal Unloader in Piper's Flat, because Delta has no loyalty for local workers, and Lithgow hasn't enough coal to supply this project, so less local jobs, more energy for coal transport, more C02 emissions. This is the 15th Development Application for a major project in 4 years that will have major cumulative impacts onthe residents of Blackmans Flat. The others are: Pine Dale Mine Modification (461-04MOD) 7 coal haulage 7 pending Lambert's Gully mine - 110,000 tonne coal and 7S0,000m3 overburden' December 2008 Extension of Kerosene Vale Fly-ash Dam 7 December 2008 Delta Western Rail Coal Unloader 7 2009 Invincible Colliery extension number 3? December 2008 Extension Mt Piper Ash & Brine Disposal (DA MOD-n-9-2007-i) - 23 March 2008 Invincible Colliery Extension Auger mining (05_0065 MOD 2) - 6 December 2007 Centennial Ivanhoe North open-cut mine (MP 05_0103) - 11 April 2007 Lithgow City Council Solid Waste Landfill (DA No. 388/05) - 5 December 2006 Centennial Extension Angus Place Colliery (MP 06_0021) - 13 September 2006 Invincible Open Cut Mine Extension Project (MP 05_0065) - 7 September 2006 Modification of Mount Piper Power Station (MOD-1-1-2006-1) - 3 June 2006 Centennial Lamberts Gully Coal Mine Extension (MP 06_0017_) - 12 May 2006 Pine Dale Mine open-cut mine (DA 461-04) - 14 November 2005 Included amongst these are some of the most offensive projects any community anywhere would ever have to deal with, such as a regional garbage and asbestos dump just 600 metres from homes, 2 open cut mines just 200 metres from homes, in excess of 200 blasts over 3 years just 240 metres from homes. Anyone of those projects would be enough to bury a small rural Village to cope with the DoP and Council have approved 13. Not once has the DoP or Council changed so much as a comma in any of those DAs to address the concerns raised by Blackmans Flat residents. Not once has the DoP or Council addressed the issue of cumulative impacts. Words cannot describe the disgust and contempt the people in this town have for the DoP and Council, but below is an attempt to describe	

Submission number	Issue	Submission details	Response
		what has happened over the last 4 years? - Unreasonable - Gross injustice - Oppressive - Victimisation of a vulnerable community - Harassment of a vulnerable community - Improperly discriminatory behaviour - Unjustifiable and improper grounds - Human rights abuse and violation - Failure to prioritise people over profits - Exacerbation of our existing vulnerability to cumulative impacts from offensive industry - Adversely affects on a vulnerable community - Gross abuse and corruption of proper planning processes In the DoP and Council's quest to look after their own interests and those of their power generation and coal mining mates you have clearly forgotten that there are human beings actually living here who in theory are supposed to have human rights. The DoP and Council have continually pushed the boundaries way beyond what anyone anywhere in the world could regard as acceptable, You have bent, twisted, broken and corrupted *every* single planning ethic and law in this State to get your own want and you did. But meanwhile we residents of Blackmans Flat are stuck here in this hell-hole suffering all the consequences.	
144	Social issues	The residents of Blackmans Flat will once again bear the major impacts of this proposal. This is on top of the massive cumulative impacts from industry that the NSW Department of Planning and Lithgow City Council have already dumped on this community over the last 4 years. I would have thought that dumping highly offensive projects like a Regional Garbage Tip, 4 open-cut mines, an expanded power station ash & brine dump, 2 coal-fines briquette plants, and massive coal transport impacts would have been enough for one small community to bear. But no, here we go again, you will almost double all those impacts and once again lie that the impacts can be managed. Corruption is a terrible thing. The Environmental Assessment falsely claims that this proposal is 3 kilometres from Blackmans Flat. A quick glance at any map or Google Earth clearly shows that Blackmans Flat township is just 2 kilometres from the existing Mt Piper Power Station smokestack, and just 1 kilometre from Mt Piper flyash repository. This is far too close to safely manage the traffic, noise, dust, and emission impacts of a 45% increase in the size of Mount Piper Power Station from 1400 MW to 2000 MW.	3.12
127	Social issues	This township has and will endure cumulative impacts already existing from open cut mines, and the eastern boundary of the Mt Piper fly ash repository and future plans for proposed open cut mines including a waste facility. Given the current LEP zone Rural 1A allows for rural ownership and industry, the capacity for industry has already exceeded the acceptable levels and cannot endure yet another additional impact in this location. The current fly ash repository will reach its capacity within the next 5 years and as stated by this application it will seek new locations within this vicinity, Environmental Assessment Chapter 1. Introduction Table 1-1 Relevant Projects Ash Storage Project: The Concept Plan provides for project approval for two areas (Lamberts North and Lamberts South) adjacent to the existing dry	3.12

Submission number	Issue	Submission details	Response
		ash storage repository which will reach capacity around 2015). Both these areas are currently open-cut coal mines. The Concept Plan also seeks concept approval for two additional areas (Neubecks Creek and Ivanhoe No 4 which are further away and yet to be mined. Lamberts North & Lamberts South also borders on this Village and object to this projected proposal given its proximity of within a kilometre of this township. To approve the above application is not agreeable on the grounds that regardless of noise, dust, emission regulatory legislative requirements it will consume and surround this village.	
144	Social issues – economic	Delta's insatiable water demand is placing the Oberon timber industry at risk.	3.12
144	Social issues – health	Temperature inversions are a regular occurrence in the Wallerawang/ Lidsdale and Blackmans Flat areas, and this has created severe long term health consequences for local residents.	3.12
156	Strategic justification	CCS technology can not be economically 'tacked on'; to an operating fossil fuel power station unless the power station is specifically designed for a specific CCS technology. The statement (page 10) that the power station would need to be built 'CCS ready' is vague, contractually and legally difficult to enforce. The application does not define what 'CCS ready" entails in power station scope, functionality or cost or what type of CCS technology that power station would be 'ready' for. It is a spin.	3.13
156	Strategic justification	The EIS summary (page 10) states that the carbon price of $100 - $150/tonne would be initially needed to make CCS technology viable (and would reduce over time). If this number is included in the cost of fossil fuel power, it becomes more expensive than renewable energy and energy efficient measures. This stamen is unfounded and optimistic. It implies a level of confidence in a future CCS solution which is unwarranted. No evidence has ever been publicly produced and reviewed to give any confidence that CCS will ever be commercially viable. There is no CCS technology in the world for fossil fuel power station emissions, and there are no commercial proposals for fossil fuel power stations anywhere in the world. CCS involves multiple expensive and intractable aspects including: power station technology to produce a pure CO2 waste stream; Compressors to liquefy the gas; Selection and proving of storage locations: pumps, pipes, land easements, backup systems, leakage inspections, temperature control systems to move the liquefied gas from the power station to the storage location (very large pipes and very long distances); Auditing of storage integrity over hundreds of years; Public liability insurance in case of leaks. Any statements about the full cost of CCS are meaningless without documentation of major assumptions about the above cost aspects. In particular, the assumption regarding cross subsidy by the taxpayer for land use and public liability must be clarified to the community. We expect that if CCS was ever implemented, the costs would increase over time not decrease. This is because the most secure storage sites with the shortest pope runs would be used first. Power station technology would possibly improve, but cost savings would be offset by increasing costs of land, pipes, pumps, compressors and insurance.	3.13
156	Strategic justification	The EIS summary page 3 states : An ultra-supercritical coal fired power plant or a combined cycle gas turbine is considered to provide the best means of supplying electricity to the National Electricity Market at commercially competitive rates to meet future increased baseload demands in NSW." The statement that fossil fuel power is 'considered to provide the best means…" is unfounded on evidence. Who considers that fossil fuel power is 'best'?	3.13

Submission number	Issue	Submission details	Response
		We disagree with the proposition that decisions about power generation should be made on commercial cost alone. We have a duty to consider factors other than pure commercial cost. In this case we have a duty to consider climate change risk. We disagree with the proposition that the least cost option is generally adopted by our society. There are many examples where, as a society, we have chosen more expensive options for environmental or social reasons. These include: banning of CFCs; higher air and water quality standards for industrial emissions; motor vehicle emission control and safety measures; limitation and controls on logging; limitations and controls on pesticide use. This submission does not include any evidence hat the Australian community has considered the climate change issue, and has decided that it is 'best' to exacerbate the risks of climate change. Neither the NSW nor the Federal government has won an election with 'more fossil fuel power' as part of their policy platform. Opinion polls and election results provide prima facie evidence that the community is very concerned about climate change and wants something done about it. The fact that no federal or state politicians have claimed credit for planning additional coal power is further circumstantial evidence that the community does not want more fossil fuel power and that the politicians know it. It is also incorrect to contend that cheap extra energy has some vital national economic purpose. The vast bulk of the energy produced by these power stations will not be used for export –exposed industry but for domestic households. Cheap electricity for poorly designed imported air conditioners for poorly designed houses is not an economic imperative. It is incorrect to claim, as certain lobby groups have, that higher electricity prices will ruin Australian industry. Currency exchange rates and interest rate relativities have a much larger effect on our international trade competitiveness than electricity cost (with the exception of Aluminium). This planning application is being made at a time when the Federal Government has introduced a carbon reduction scheme legislation and my become party to international schemes. The purpose of these schemes will provide financial disincentives to CO2 emissions and thereby stop projects like this one which generate extra emissions. The size of these disincentives will increase with time as the need to cut emissions becomes more urgent.	
1	Strategic justification	The proposed expansion of the coal-fired power stations 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	3.13
52	Strategic justification	We don't need any new coal fired power stations, as we are seeing our water supplies dwindle with the ever increasing droughts and coal fired power stations and the associated mines consume hundreds of litres of water every day – much more than the renewable technologies.	3.13
209	Strategic justification - demand management and energy efficiency	The EA's cites the findings of the 2007 *Inquiry into Electricity Supply in NSW* conducted by Professor Tony Owen as justification for new baseload power capacity. Prof Owen's report argues for the privatisation of both electricity retailers and generators, and planning for a new baseload power plant. The inquiry ignored evidence that demand side measures, such as phasing out off-peak hot water systems and improved energy efficiency. The demand forecasts used in the inquiry have also been shown to be unsupportable.	3.13

Submission number	Issue	Submission details	Response
32	Strategic justification - alternative forms of energy generation	I will not sit by while this government obliterates the future of all people, all species and all generations. I demand that you invest the money that you intend to spend on this plant on solar thermal plant instead. As a future renewable energy engineer, I am disgusted by your lack of foresight.	3.13
29	Strategic justification - alternative forms of energy generation	If energy efficiency measures are not sufficient to negate the need for new power generation, only renewable energy technology should be considered. Only local renewable technologies should be considered for future power generation.	3.13
30	Strategic justification - alternative forms of energy generation	New coal power stations will divert money and resources from renewable energy development.	3.13
144	Strategic Justification - alternative forms of energy generation	The Federal Government has committed to a renewable energy target of 20% by 2020. The NSW Government has committed to a renewable energy target of 15% by 2020. How can this ever be achieved if Mt Piper, Bayswater and the Munmorah Upgrade are approved and fuelled by coal? These projects will add 20% more fossil-fuel energy to the NSW total, the equivalent of the emissions from all cars, trucks, buses, trains and planes currently operating in NSW?	3.13
31	Strategic justification - alternative forms of energy generation	The NSW government should be changing now to carbon neutral forms of energy such as solar and wind. It is morally, economically and scientifically wrong to be expanding coal powered power stations or building new ones. We should be changing our fuel sources now and helping coal producing communities to adjust and adapt. The longer we delay in making these changes and adjustments the more costly the change will be. The longer we delay, the worse global warming will be.	3.13
83	Strategic Justification – alternative forms of energy generation	A much better alternative is to switch to renewable energy generation and use existing power station as a base station.	3.13
150	Strategic Justification – alternative forms of energy generation	All new (augmented) electricity generating capacity must be based on renewable or low or no greenhouse gas emissions based technologies in order for our state to address climate change on a reasonable timeframe. I'm also told that if CCS technology to reduce the greenhouse gas emissions of the proposed expansion to Mt Piper was to be installed at the plant, it would likely make coal fired power generation on par or more expensive than some forms of renewable, low carbon electricity generation (wind and PV solar for example). That is if CCS is effective. CCS is currently unproved at this scale I'm informed. Europe has some very large wind farms that can generate the same scale of electricity as Mt Piper can.	3.13

Submission number	Issue	Submission details	Response
		A gradual, planned build up of renewable energy production in the area would even allow Mt Piper (and its nearby power station neighbour) to be retired from active service.	
195	Strategic Justification – alternative forms of energy generation	All new energy should be renewable. Fossil fuel power stations should be replaced with renewable energy asap.	3.13
41	Strategic Justification – alternative forms of energy generation	All new energy should come from pollution free, renewable energy – most children I know could tell 'politicians' that.	3.13
85	Strategic Justification – alternative forms of energy generation	All new power generating facilities should be based on renewable energy which, once established produces electricity with zero emission. Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive races.' The best means of supplying electricity should be based on an environmental and sustainable rationale.	3.13
101, 107	Strategic Justification – alternative forms of energy generation	All new power generating facilities should be based on renewable energy, which once established, produce zero emissions.	3.13
198	Strategic Justification – alternative forms of energy generation	All new power generation stations should be based on renewable energy.	3.13
130	Strategic Justification – alternative forms of energy generation	All new power-generating facilities should be based on renewable energy which, once established, produces electricity with zero emission. Climate change is a scientific fact and every effort needs to be made to lower, not raise, carbon emissions. The planet has already passed the 'safe' mark of 350ppm. Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive rates". When the climate scientists of the world are warning of dangerous levels of carbon emissions, the "best means of supplying electricity" should be based on an environmental and sustainable rationale. There is no proposal by Delta, at this stage, to install CCS or "clean coal" technology to the proposed extension. With all the rhetoric of "new-gen coal", there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is "not currently commercially available". They realise, of course, that "clean coal" technology would change the	3.13

Submission number	Issue	Submission details	Response
		proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	
74	Strategic Justification – alternative forms of energy generation	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.	3.13
92	Strategic Justification – alternative forms of energy generation	Any new electricity generation projects should be focussed on using alternative forms of energy generation that do not endanger the future of our country and the earth, we have gone beyond business as usual.	3.13
117	Strategic Justification – alternative forms of energy generation	Any new power generation capacity for NSW should be achieved using zero emission renewable technology. There is now a growing body of evidence that a well planned and well distributed integrated network of leading edge renewable (zero emission) power generation facilities can meet base load requirements. Particularly if supplemented by small measures of CCGT gas powered generation for balancing/peaking requirements. The argument that only fossil fuels or nuclear can meet base load requirements is now very weak indeed.	3.13
169	Strategic Justification – alternative forms of energy generation	Australia has the best solar resource anywhere in the world. Also wind, geothermal and wave/tidal should be our priority.	3.13
132	Strategic Justification – alternative forms of energy generation	Base load power generation can be supplied by renewable power systems that are currently in operation and under development, such as in Spain (Andasol), in California and the recently announced 2000 MW Ordos solar farm in China? All capable of providing base load. Decentralised renewable power plants would benefit and stimulate regional inland towns across the country.	3.13
136	Strategic Justification – alternative forms of energy generation	Base load power generation can be supplied by renewable power systems that are currently in operation and under development, such as in Spain (Andasol), in California and the recently announced 2000 MW Ordos solar farm in China? All capable of providing base load. Decentralised renewable power plants would benefit and stimulate regional inland towns across the country.	3.13
199	Strategic justification – alternative forms	Both Concept Plan Applications feature flawed Strategic Justifications. Owen Inquiry findings are extensively cited as supporting the need for new baseload supply, yet as a recent University of Technology Sydney (UTS) study has indicated, the projections for both electricity consumption and generation have since been modified considerably', such that the Inquiry's findings warrant substantial reconsideration.	3.13

Submission number	Issue	Submission details	Response
	of energy generation	Further, the UTS study outlines several comprehensive scenarios through which predicted energy shortfalls can be met through a mix of demand management measures such as energy efficiency, and distributed and renewable energy.' The 2009 Electricity Statement of Opportunities (ESOO) published by The Australian Energy Market Operator indicates that just 182 MW of additional capacity will be required in NSW in *2015/2016,* based on its demand *1* supply forecasts' This could easily be met by demand management and distributed generation, and hardly necessitates the construction of even one new baseload power station with a 2000 MW capacity. The Department of Planning is also currently exhibiting Delta Electricity's Project Application to rehabilitate Munmorah Power Station, to a maximum generating capacity of 700 MW and powered by coal or gas. New coal-fired power stations and associated mines will consume more of our precious and dwindling water supplies, and exacerbate unacceptable environmental and human health issues in surrounding communities due to increased air and water pollution. A Newspoll survey in 2007 revealed that 82% of adults in NSW say they do not want a new coal-fired power station built in the state and instead want their future energy needs to be met through other options such as renewable energy and improving energy efficiency" Only 7% said they support a new coal-fired power station being built in the state. As such, the NSW Government is likely to face massive public backlash if either Concept Applications are approved. The NSW Government must not approve either of the proposed Concept Applications, and should instead declare a moratorium on any new coal-fired power stations, toward facilitating an urgent transition to a clean energy future.	
233	Strategic Justification – alternative forms of energy generation	Build on our renewable energy industry.	3.13
375	Strategic Justification – alternative forms of energy generation	Clean coal is a joke. Daily I clean black particles from my house, roof and I have to fertilize the garden as the black dust is environmentally disgusting.	3.13
118	Strategic Justification – alternative forms of energy generation	Clean coal is an oxymoron. All new power generating facilities should be based on renewable energy which, once established, produce electricity with zero emission. Every effort needs to be made to lower, not raise carbon emissions.	3.13
46	Strategic Justification – alternative forms of energy generation	Clean green power generation is the only viable future infrastructure investment. If changing Govt will change the strategy to green power then so will my vote.	3.13

Submission number	Issue	Submission details	Response
143	Strategic Justification – alternative forms of energy generation	Climate Action Newtown also encourages the Planning Department to look past gas as a long term option and fully consider the opportunities from investing in renewable energy. We urge the Department to stop making excuses about any perceived barriers and to consider the technologies and reports that indicate wind, solar and geothermal are viable and globally respectable power generating options that warrant an immediate transition.	3.13
373	Strategic Justification – alternative forms of energy generation	Coal fired power stations are old and outdated technology and out of place in the 21st century.	3.13
78	Strategic Justification – alternative forms of energy generation	Coal fired power stations are the single biggest threat to the climate and to life on earth. Our government has publically stated that Australia should seek to keep global temperature increase to no greater that 2 degrees celcius. This will require an immediate transition from coal to renewable energy sources.	3.13
219	Strategic Justification – alternative forms of energy generation	Coal fired power stations is an outdated concept and hard to believe.	3.13
230	Strategic Justification – alternative forms of energy generation	Coal is so old school. Get with the program.	3.13
39	Strategic Justification – alternative forms of energy generation	Coal must be phased out. We must seek alternative power sources. We need statesman-like decision makers to make the tough decisions – not economic rationalists.	3.13
135	Strategic Justification – alternative forms of energy generation	Coal-fired power stations use and pollute large amounts of water, and LEG members believe the only cure is to move to technologies that are not water dependent or pollute waterways. Because all will have a critical impact on the financing and planning if the NSW Government wishes to sell this proposal in good faith to potential investors. LEG understands that the NSW Government encourages greater energy efficiency, switching to low-carbon intensity fuels, and the use of more renewable energy. Our society requires zero emission energy now, not in 50+ years time after this proposal is decommissioned.	3.13

Submission number	Issue	Submission details	Response
		And we must question whether C02 geosequestration is ever likely to become a reality. The collection, compression, transport and safe disposal of this C02 waste will be a very energy intensive and water intensive process, it will come at a very high price, with a very high risk. Surely now is the time to look towards lower emission or zero emission energy technologies.	
86	Strategic Justification – alternative forms of energy generation	Concerned about children's future. How about showing some leadership and building a power station based on renewable fuels such as solar.	3.13
138	Strategic Justification – alternative forms of energy generation	Delta should instead be investing in alternative renewable energy sources for electricity production. The government should support the retraining of coal workers for renewable energy production. The government should support more households to produce solar power so that the need to increase coal powered electricity is not warranted.	3.13
160	Strategic Justification – alternative forms of energy generation	Delta's proposal is based on old technology	3.13
81	Strategic Justification – alternative forms of energy generation	Energy efficiency is a far better method of achieving increased power capacity. CO2 emissions have no place in the 21st century.	3.13
112	Strategic Justification – alternative forms of energy generation	Extending this coal fired power station is the opposite of what we should be doing. Thermal/solar power is the answer.	3.13
8	Strategic Justification – alternative forms of energy generation	From information from "The Science Show" ABC Radio national, Saturday 3rd October 2009, a solar thermal power station is cheaper, uses less water and has a free power source (that is if power stations are built from new). It seems illogical, immoral and economically naïve not to at least research the possibilities.	3.13
184	Strategic Justification – alternative forms	Future electricity needs should be met with renewable energy power stations.	3.13

Submission number	Issue	Submission details	Response
	of energy generation		
156	Strategic Justification – alternative forms of energy generation	Gas should be used as a demand/supply matching tool, with the bulk of the energy on average being provided by renewable energy.	3.13
194	Strategic Justification – alternative forms of energy generation	Globally, nationally and locally, efforts must urgently be made to switch away from carbon intensive activities, towards cleaner alternatives. Approving this proposal as either a coal or gas fired power station, would be contrary to the clear and compelling scientific evidence of the need to reduce greenhouse emissions. The best practices energy generation, from an environmental and human health standpoint comes from renewable energy generation technologies.	3.13
241	Strategic Justification – alternative forms of energy generation	Government focus should be on developing sustainable and renewable sources . Be sensible.	3.13
140	Strategic Justification – alternative forms of energy generation	Governments should be building sustainable, renewable energy power stations which once established produce zero emissions.	3.13
55	Strategic Justification – alternative forms of energy generation	Governments should be investing in non polluting, sustainable power sources not ones that make the most pollution.	3.13
139	Strategic Justification – alternative forms of energy generation	I am concerned that another coal fired power station or two is as good as underway. By the way, burning gas instead doesn't put us too far ahead. In a previous letter 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 quantities 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 emissions, 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 hot water 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 stations.	3.13

Submission number	Issue	Submission details	Response
123	Strategic Justification – alternative forms of energy generation	I am doing my bit by installing solar panels for my house. I feel the only way to go in this country is renewable energy like solar, wind etc. There is no such thing as green coal energy.	3.13
123	Strategic Justification – alternative forms of energy generation	I am very disturbed to read of the expansion of coal fired power stations to the detriment of alternative renewable resources which are being developed with Australian technologies overseas. We should be more clever. Let's develop jobs with a renewable resource than stay on the same track. It's time to be courageous and catch the crest of the renewable energy surge. There's money to be made her with more jobs, and less carbon polluting activities. Please consider your political future and work for the future of your community.	3.13
104	Strategic Justification – alternative forms of energy generation	I believe that all new power supplies should be based on renewable resources. For the sake of future generations, please don't proceed with this project.	3.13
26	Strategic Justification – alternative forms of energy generation	I hope you will consider refusing this planning application, and 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 and the imminent threat.	3.13
100	Strategic Justification – alternative forms of energy generation	I request consideration be given for a transition of power station to become solar thermal or gas fired as a matter of urgency. You ask us to abide by the law – please show integrity and act responsibly and show leadership – I request that a plan for immediate transition to renewable be put in place for this power station.	3.13
141	Strategic Justification – alternative forms of energy generation	I think that we need to encourage sustainable power that contributes to a future beyond this generation and show the youth of today that we care about their future.	3.13
121	Strategic Justification – alternative forms of energy generation	I urge the Planning Department to also look past gas as a long term option and fully consider the opportunities from investing 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 respectable power generating options now.	3.13
310	Strategic	I urge you to recommend that these power stations be rejected and invest in renewable energy	3.13

Submission number	Issue	Submission details	Response
	Justification – alternative forms of energy generation		
120	Strategic Justification – alternative forms of energy generation	If clean coal technology was added to the project, the only environmentally acceptable alternative, the project would become too expensive and it would be cheaper to use green renewable technologies such as wind and solar. While gas is less polluting, it is still too polluting to achieve substantial reduction in global warming. Therefore the project should use renewable sources of green energy.	3.13
258	Strategic Justification – alternative forms of energy generation	Invest in energy efficiency and alternative, renewable and decentralised sources of energy.	3.13
185	Strategic Justification – alternative forms of energy generation	Invest in more renewable energy sources.	3.13
248	Strategic Justification – alternative forms of energy generation	Invest in renewable energy sources.	3.13
49	Strategic Justification – alternative forms of energy generation	Invest in the future of our planet and harness renewable energy.	3.13
183	Strategic Justification – alternative forms of energy generation	Invest what money there is in renewable wind power generators in the time you have left.	3.13
115	Strategic Justification –	Investment by the NSW government should be put towards decreasing energy demand and building infrastructure to harvest energy from renewable sources (solar, wind geothermal). The NSW government must not rely on unproven CCS technology to make coal fired power	3.13

Submission number	Issue	Submission details	Response
	alternative forms of energy generation	stations and environmentally viable option. At this point in time, even coal companies themselves are loathe to invest their own funds in development of this alternative. If Germany, California and China can invest heavily in renewable technology, we should be able to follow suit and not throw billions of public funds into outdated modes of energy generation.	
131	Strategic Justification – alternative forms of energy generation	Isn't it time to switch to a more progressive approach using solar thermal power to drive the turbines? Why not invest in our own Australian – proven technology if other countries have the foresight to, why not Australia?	3.13
90	Strategic Justification – alternative forms of energy generation	It is imperative for the future that we put all our efforts, financial and otherwise, into renewable energy. All new power-generating facilities should be based on renewable energy which, once established, produces electricity with zero emission. Climate change is a scientific fact and every effort needs to be made to lower, not raise, carbon emission. More funds should be made available for renewable energy research. Delta realises that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
15	Strategic Justification – alternative forms of energy generation	It is imperative that the NSW government invest in renewable energy technology immediately, rather than build new coal or gas fired power stations which would drastically increase NSW greenhouse pollution by as much as 20%.	3.13
42	Strategic Justification – alternative forms of energy generation	It is possible that the planned coal/gas power plant at Mount Piper will not be able to operate at full capacity, or will not be able to operate at all due to Federal legislation enacted with regards to renewable energy in the future. By investing in renewable energy sources now, the NSW government would avoid such a situation in the future. Furthermore, increased investment in renewable energy would be a boom for the high growth industry - that is the renewable energy industry.	3.13
87	Strategic Justification – alternative forms of energy generation	Lithgow is very suitable for wind power and there is an abundance of sites in NSW suitable for wind power generation. I would like to see the study that Delta prepared to show that wind generation was not a viable option. All new power generating facilities should be based on renewable energy which, once established produces electricity with zero emission. Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive races.' The best means of supplying electricity should be based on an environmental and sustainable rationale.	3.13
330	Strategic Justification – alternative forms of energy generation	Long term viable options are available.	3.13

Submission number	Issue	Submission details	Response
204	Strategic Justification – alternative forms of energy generation	Money should be invested in more wind and solar powered generating systems.	3.13
88	Strategic Justification – alternative forms of energy generation	More funds should be made available for renewable energy research. Delta realises that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
89	Strategic Justification – alternative forms of energy generation	More funds should be made available for renewable energy research. Delta realises that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
126	Strategic Justification – alternative forms of energy generation	My bet is that you'll try to build this power station with fossil fuels regardless of the alternatives (even nothing is better alternative to climate chaos, but here also concentrated solar thermal, wind, PV, wave, vibration geo, energy reductions etc.), regardless of the costs to humanity and the biosphere and regardless of the local environmental and jobs impacts, because you're mainly worried about money.	3.13
176	Strategic Justification – alternative forms of energy generation	Need more funds for renewable energy	3.13
202	Strategic Justification – alternative forms of energy generation	Need to make the transition to renewable energy now.	3.13
173	Strategic Justification – alternative forms of energy generation	Need to start moving towards renewable.	3.13
149	Strategic	NSW can and must invest in renewable energy to make the urgent transition to the clean, sustainable economy that we need, with quality	3.13

Submission number	Issue	Submission details	Response
	Justification – alternative forms of energy generation	green jobs for our communities.	
68	Strategic Justification – alternative forms of energy generation	NSW can reduce its electricity consumption if the govt leads a strong campaign for efficiency gains. This could realistically be complemented by investment in renewable generation so that we can begin the phase out of coal generation. The consequences of continuing to rely on coal are too diabolical to take any risk with. we need to demonstrate to the world how change can occur with minimal economic cost	3.13
43	Strategic Justification – alternative forms of energy generation	NSW doesn't need new coal-fired power stations. A recent report by the University of Technology Sydney shows that the future energy needs can be met through energy efficiency measures and renewable energy. 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.	3.13
44, 47, 51, 53, 57, 60, 64, 65, 69, 72,	Strategic Justification – alternative forms of energy generation	NSW doesn't need new coal-fired power stations. A recent report by the University of Technology Sydney shows that the future energy needs can be met through energy efficiency measures and renewable energy. 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.	3.13
40	Strategic Justification – alternative forms of energy generation	NSW needs to take a lead on efficient, clean power, and I strongly object to my tax dollars being used to support a backwards project rather than being used to fund renewable energy options and R&D. I make a major effort to reduce my emissions footprint by subscribing to 100% 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.	3.13
21	Strategic Justification – alternative forms of energy generation	NSW should be a leader not a laggard on clean energy technologies.	3.13
122	Strategic Justification – alternative forms of energy generation	Plans to provide more electricity should be based on renewable sources. There is no rationale for expansion of coal fired power stations when our efforts should be focussed on generating an industry based on renewable, which will also provide jobs, as many as would be provided by the expansion at Mt Piper. The opportunities to generate power from other sources are many and we need to harness our efforts in this direction.	3.13
322	Strategic Justification –	Public funds should not be wasted and we should let the coal industry try to prove unknown technology. Our taxes should be spent on clean green technology.	3.13

Submission number	Issue	Submission details	Response
	alternative forms of energy generation		
174	Strategic Justification – alternative forms of energy generation	Put the resources into increasing energy efficiency	3.13
52	Strategic Justification – alternative forms of energy generation	Rather than building new coal fired power stations, we should be investing in renewable energy. A recent report by the University of Technology Sydney shows that the future energy needs can be met through energy efficiency measures and renewable energy.	3.13
271	Strategic Justification – alternative forms of energy generation	Ready availability of renewable energy techniques. Australian obligations under the Kyoto protocol.	3.13
	Strategic Justification – alternative forms of energy generation	Renewable energy alternatives be invested in and supported by the Department of Planning NSW.	3.13
207	Strategic Justification – alternative forms of energy generation	Renewable energy and energy efficient technologies are available here and will create many more sustainable jobs.	3.13
369	Strategic Justification – alternative forms of energy generation	Renewable energy is the way of the future, and the Hunter is one of the most ideal places to grow it. Do not approve this project.	3.13
128	Strategic Justification – alternative forms	Renewable energy must be the only energy now produced by Governments. Governments must respond to the need to cut coal fired power stations and be responsible to the people of the world.	3.13

Submission number	Issue	Submission details	Response
	of energy generation		
231	Strategic Justification – alternative forms of energy generation	Renewable energy options should be utilised to prevent further damage.	3.13
63	Strategic Justification – alternative forms of energy generation	Renewables only. No future without a planet.	3.13
50	Strategic Justification – alternative forms of energy generation	Solar power needs more support and is regenerative – unlike dirty coal – there is no clean coal. Not for many years, by which time we have passed the tipping point of climate change. Invest funds in clean energy now.	3.13
376	Strategic Justification – alternative forms of energy generation	Solar thermal power with thermal storage is waiting to be built on a large scale and will not only reduce GHG but will create prosperity in the new era we have already entered.	3.13
206	Strategic Justification – alternative forms of energy generation	Spend more time and money investing in new cleaner renewable technologies.	3.13
269	Strategic Justification – alternative forms of energy generation	Suggest that we employ the myth of clean coal in the foreseeable future. It is not practical or sensible to use coal in the looming problem of climate change.	3.13
259	Strategic Justification – alternative forms of energy	Technology from the last century.	3.13

Submission number	Issue	Submission details	Response
	generation		
166	Strategic Justification – alternative forms of energy generation	Technology has lead to researching alternative forms of sourcing our power.	3.13
36	Strategic Justification – alternative forms of energy generation	The approval of new fossil fuel powered power stations will delay development of renewable energy solutions.	3.13
22	Strategic Justification – alternative forms of energy generation	The examination of renewable energy generation options in the environmental assessment is deficient in that it does not consider solar thermal, and dismisses geothermal as being remote from demand. This ignores the recent development of commercially viable solar thermal plants with storage capacity. It also ignores two facts about geothermal; that one of the prospective areas is at Bulga in the Hunter Valley, close to the existing distribution grid, and that the plans for geothermal generation in the Cooper Basin include a high voltage DC interconnector to the eastern seaboard.	3.13
316	Strategic Justification – alternative forms of energy generation	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.	3.13
164	Strategic Justification – alternative forms of energy generation	The Federal Government has committed to a renewable energy target of 20% by 2020. The NSW Government has committed to a 15% renewable target by 2020. These renewable energy targets will be unachievable if the NSW Government opts for the coal-fuelled options for new Base load power stations at Mt Piper. These projects will add 20% to the total energy generated by fossil fuels in NSW.	3.13
209	Strategic justification – alternative forms of energy generation	The growing body of expert opinion is that carbon capture and geo-sequestration will not be commercially available for another 20 or 30 years. The idea that new coal or gas-fired power stations will be built carbon capture ready should not be viewed as an appropriate mitigation for C02 pollution.	3.13
209	Strategic justification – Alternative forms of energy generation	The Institute for Sustainable Futures based at the University of Technology Sydney demonstrated that NSW could have surplus electricity generation capacity by the year 2020 from a combination of factors including developing renewable power, implementing energy efficiency measures and building small, low-emissions co-generation plants. The UTS report discredits the Owen report and undermines the argument for both privatisation and new base-load power stations.	3.13

Submission number	Issue	Submission details	Response
		The use of the Owen Inquiry findings as strategic justification for these applications means that less environmentally damaging alternatives are not considered.	
148	Strategic Justification – alternative forms of energy generation	The money would be much better spent on renewable power sources such as photovoltaic, especially in the form of subsidising private investment by home owners. I have donated about $1200 to the Green party within the last 2 years.	3.13
286	Strategic Justification – alternative forms of energy generation	The move to renewables is a necessity for future generations and the health of the planet. We can then address the climate crisis.	3.13
146	Strategic Justification – alternative forms of energy generation	The NSW government has stated it wants to act on climate change and lower that state's emissions. How can this be reconciled with burning more coal to make electricity? All new power generating facilities should be based on renewable energy which, once established, produces electricity with zero emission. Climate change is a scientific fact and every effort needs to be made to lower, not raise, carbon emissions. There is no proposal by Delta, at this stage to install CCS or Clean Coal technology to the proposed extension. With all the rhetoric of 'new-gen coal', there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is 'not currently commercially available'. They realise, of course, that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
102	Strategic Justification – alternative forms of energy generation	The NSW government must not approve this project and start taking a leading role and make the changes necessary for a transition into clean energy sources.	3.13
91	Strategic Justification – alternative forms of energy generation	The NSW government needs to redirect investment into infrastructure for an electricity grid for renewable energy and introduce incentives that will decrease energy demand.	3.13
9	Strategic Justification – alternative forms of energy	The NSW 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.	3.13

Submission number	Issue	Submission details	Response
	generation		
75	Strategic Justification – alternative forms of energy generation	The power plant expansion is a very major piece of infrastructure and Governments should not rush into the determination of this project. In fact, the proposal should be rejected as base power should not be from coal but rather less intensive carbon sources (see Premier Rees media statement on a green revolution in the Herald, 19/10/09)	3.13
76	Strategic Justification – alternative forms of energy generation	The power station owners must make significant attempts to replace their polluting power stations with renewable energy such as wind, solar, geothermal, wave etc.	3.13
191	Strategic Justification – alternative forms of energy generation	The proposed B plant must be scrapped and replaced by a combination of renewable sources.	3.13
119	Strategic Justification – alternative forms of energy generation	The public wants to see the expansion of the renewable energy sector and it is time that some real money got spends on researching alternative power stations. If true cost benefit analysis was done on an alternative such as solar thermal power would be ahead easily.	3.13
97	Strategic Justification – alternative forms of energy generation	There are alternative sources of lower carbon baseload power which you deem too hard but can be done.	3.13
12	Strategic Justification – alternative forms of energy generation	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.	3.13
111	Strategic Justification – alternative forms of energy generation	There are renewable alternatives. Support Australian innovator (eg: David Mills) and contribute to a viable future.	3.13

Submission number	Issue	Submission details	Response
114	Strategic Justification – alternative forms of energy generation	There is ample evidence that a combination of reducing energy demand and investing in renewable energy will bring huge economic and environmental benefits. There is no good reason to lock our community into such disastrous investment as coal mines and coal fired power stations. At the very least, this proposal should not be considered until after Copenhagen in December, when Australia's commitments to emissions reduction will be clarified, and the economic folly of this coal fired power station will be even more clear. Given that low emissions energy sources can be developed, where is the government's analysis of the energy alternatives? Where is the financial support for large scale renewable energy?	3.13
95	Strategic Justification – alternative forms of energy generation	There is no discussion of the options using renewable sources of energy instead of fossil fuels.	3.13
7	Strategic Justification – alternative forms of energy generation	There must be an immediate ban on new fossil fuelled power stations in NSW. Incentives must be provided to provide an urgent transition to 100% renewable energy. Government efforts need to be directed to support a green economy with renewable energy at the core of technology and investment.	3.13
353, 354, 356, 370,	Strategic Justification – alternative forms of energy generation	There must be an urgent transition to renewable energy to keep CO2 levels to 350ppm.	3.13
3 ,4, 5, 10, 11, 13, 14, 16, 18, 19, 24, 25, 6, 28, 34, 35, 37, 61, 66, 67, 70, 79, 80, 116, 134, 142 147, 154, 159, 261, 262, 162, 163, 165, 167, 168, 171, 179, 181, 190, 193, 215, 216, 217, 218, 219, 220, 222, 223, 224, 227, 229, 234, 235, 237, 238, 239, 240, 243,	Strategic Justification – alternative forms of energy generation	There must be an urgent transition to renewable energy.	3.13

Submission number	Issue	Submission details	Response
244, 247, 249, 250, 253, 254, 256, 257, 263, 235, 257, 263, 265, 266, 268, 270, 272, 273, 274-282, 288, 289, 290, 291, 292, 294-305, 307, 308, 311, 313, 314, 315, 317-319, 321, 324, 325, 328, 329, 331, 333, 334, 336-347, 351, 352, 355-358, 361, 362, 363, 367, 368,			
306	Strategic Justification – alternative forms of energy generation	There must be an urgent transition to renewable energy. Encourage renewable energy such as the ACT model.	3.13
359	Strategic Justification – alternative forms of energy generation	There must be an urgent transition to renewable energy. It is ready and waiting. Solar thermal power with thermal storage is waiting to be built on a large scale.	3.13
360	Strategic Justification – alternative forms of energy generation	There must be an urgent transition to renewable energy. Should be done like California in the USA – solar and wind.	3.13
371	Strategic Justification – alternative forms of energy generation	There must be an urgent transition to renewable energy. The extra pollution that these power stations will contribute to the atmosphere is unrenewable.	3.13

Submission number	Issue	Submission details	Response
17	Strategic Justification – alternative forms of energy generation	There needs to be an immediate phase out of greenhouse gas emitting power stations and a strong focus on the building of the renewable energy industry.	3.13
133	Strategic Justification – alternative forms of energy generation	We need to invest in solar, wind, wave and tidal power, not more coal	3.13
373	Strategic Justification – alternative forms of energy generation	There should be an immediate change in government emphasis towards clean renewable energy – solar, wind etc.	3.13
2	Strategic Justification – alternative forms of energy generation	There should be a clause put into the sale of the power stations that they may not expand them, if they wish to generate and sell more electricity it must come from renewable sources.	3.13
105	Strategic Justification – alternative forms of energy generation	This extension is only economically favourable because alternative technologies have not been invested in. this extension is a lazy choice in view of the real action needed to convert much electricity generation to renewable sources.	3.13
208	Strategic Justification – alternative forms of energy generation	This proposal appears to be incredibly energy inefficient over the life of the project due to factors such as: the dry cooling process, transportation of coal from outside the region and transportation of water. BMCS understands the NSW Government encourages greater energy efficiency, switching to low-carbon intensity fuels, and the use of more renewable energy. We require zero emission energy now, not in 50+ years time after this proposal is decommissioned. The Society has significant doubts as to the viability of geosequestration. The collection, compression, transport and safe disposal of this C02 waste will be a very energy intensive and water intensive process, it will come at a very high price, with a very high risk. We believe that it is now time to look towards lower emission or zero emission energy technologies. Once construction is completed, fifty additional jobs will be created from the Mt Piper upgrade. Coal is not providing large numbers of jobs in regional communities and employment	3.13

Submission number	Issue	Submission details	Response
		in renewable energy infrastructure would provide a comparable number of local jobs.	
157	Strategic Justification – alternative forms of energy generation	To be clear, gas ain't a 'clean' source either. The NSW Government needs to be putting a moratorium on new fossil fuel infrastructure, pronto. Any new power for NSW must be renewable. The new power stations would drive an expansion of existing coal mines, and push to open new coal mines in NSW. This is a bad idea. They will stifle investment in sustainable, renewable technologies and industry, locking NSW into decades of rising greenhouse pollution. Even the UK recently committed to no new coal fired power stations unless they capture and bury at least 25% of greenhouse gases immediately and 100% by 2025. Coal giant E.ON recently shelved their controversial plans for a new coal fired at Kingsnorth in Kent.	3.13
180	Strategic Justification – alternative forms of energy generation	Urgent transition to renewable energy sources needed.	3.13
155	Strategic Justification – alternative forms of energy generation	we believe that viable, cost effective alternatives to this proposal can be developed which would not have major disadvantages of the present proposal. The essence of our argument is that renewable energy solutions can meet the need for power supply into the future, and that these renewable energy solutions will avoid the inevitable environmental impacts of the current proposal.	3.13
71	Strategic Justification – alternative forms of energy generation	We each, individually and as a nation, have a moral and ethical obligation to find non-fossil solutions to the challenge before us. Renewable, conservation, efficiency or even nuclear power should be considered in lieu of the proposed fuel types for this facility. The video link at http://www.youtube.com/wathc?v=i-faBHqVu04 does an excellent job of quantifying the argument I have submitted.	3.13
54	Strategic Justification – alternative forms of energy generation	We must look into and use renewable energy and minimise pollution, especially greenhouse gas emissions. You should be more focused on clean industries and addressing climate change not adding to the problem.	3.13
2	Strategic Justification – alternative forms of energy generation	We must start reducing use of coal for power right now. If NSW needs more base load power it must come from renewable sources. Cost does not come into it; we must start reducing our CO2 emissions now.	3.13
129	Strategic Justification – alternative forms of energy	We must turn asap to renewable energy sources. All coal fired stations should be phased out and simply left to live out their current lifespan. No extensions and no new stations. Otherwise the changes consequent to rising carbon emissions make continued human life on this planet impossible.	3.13

Submission number	Issue	Submission details	Response
	generation		
177	Strategic Justification – alternative forms of energy generation	We need to be investing in renewable energy which will have zero emissions once established. Renewable energy will provide comparable job opportunities once the plants are established.	3.13
103	Strategic Justification – alternative forms of energy generation	We need to be reducing carbon emissions, not increasing them. Why not invest in renewable energy?	3.13
245	Strategic Justification – alternative forms of energy generation	We need to develop the use of renewable energy and decrease the impact on climate change.	3.13
182	Strategic Justification – alternative forms of energy generation	We should support renewable technology which is now a hugely growing industry.	3.13
96	Strategic Justification – alternative forms of energy generation	When is the government going to do the right thing by the people of NSW and Australia, and look to renewable energy to supply our power needs, instead of polluting coal, which despite rhetoric to the contrary, is very unlikely to ever be 'clean'. All new power generating facilities should be based on renewable energy which, once established, produces electricity with zero emission. Climate change is a scientific fact and every effort needs to be made to lower, not raise carbon emissions.	3.13
45	Strategic Justification – alternative forms of energy generation	When will the decision makers, the leaders of government and industry understand that, without sacrificing jobs and lives, we can make a difference by creating a new industry in renewables.	3.13
251	Strategic justification – alternative forms of energy generation	Would rather see more money invested on more environmentally friendly forms of energy.	3.13

Submission number	Issue	Submission details	Response
209	Strategic justification – cost	Replacing the state's growing dependence on centralised 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.	3.13
96	Strategic justification – cost	There is no proposal at this stage to install CCS or 'clean coal' technology to the proposed extension. With all the rhetoric of 'new-gen coal', there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is 'not currently commercially available'. They realise of course, that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
98	Strategic justification – cost	There is no proposal at this stage to install CCS or 'clean coal' technology to the proposed extension. With all the rhetoric of 'new-gen coal', there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is 'not currently commercially available'. They realise of course, that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
101	Strategic justification – cost	There is no proposal at this stage to install CCS or 'clean coal' technology to the proposed extension. With all the rhetoric of 'new-gen coal', there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is 'not currently commercially available'. They realise of course, that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
107	Strategic justification – cost	There is no proposal at this stage to install CCS or 'clean coal' technology to the proposed extension. With all the rhetoric of 'new-gen coal', there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is 'not currently commercially available'. They realise of course, that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
131	Strategic justification – cost	There is no proposal at this stage to install CCS or 'clean coal' technology to the proposed extension. With all the rhetoric of 'new-gen coal', there is no expectation of putting this technology into action at Mt Piper. Delta even admits it is 'not currently commercially available'. They realise of course, that 'clean coal' technology would change the proposal from the best commercially competitive rate of supplying electricity, to one seriously rivalled and probably surpassed by a renewable power generating facility of similar capacity.	3.13
94	strategic justification – demand management & energy efficiency	Baseload power requirement: we note that the advertised proposal is described as a baseload power station. We understand it is often stated by proponents of fossil fuelled energy that renewable energy systems are not capable of supplying baseload power. Firstly, we are very doubtful that the real requirement in this case is for a baseload station, that is, a station capable of providing the same level of power output in every hour of the 24 hour daily cycle. secondly, we are confident that renewable energy systems, including a mix of wind, solar thermal and existing major hydroelectric generators are capable of providing the required power to run NSW (and indeed Australia) throughout the daily cycle. The transition to a fully renewable generation cohort will be made easier by the existing base of coal burning stations which have useful operational life remaining. On the first point (what is the real requirement for generation in each hour of the daily cycle) we believe the current demand profile has been distorted by the preponderance of coal fired stations, for which inconvenience and cost is incurred when there is a need to reduce	3.13

Submission number	Issue	Submission details	Response
		power output. Accordingly, major users in industry and to some extent residential users have been encouraged by tariffs to increase their night time power consumption. In the long term this pattern is likely to change, so that power consumption is encouraged by lower tariffs during periods of cheaper power generation, and discouraged by higher tariffs during periods of more expensive power generation. This may no longer be a simple peak/off peak formula based on continuous generation capacity, and may include remote control of non-time-critical appliance to take opportunistic advantage of generation peaks in renewable power capacity. Given the possibility of influencing the daily demand profile through tariffs, which would be done over a number of years, we believe that all of the growth in electricity demand can be accommodated by renewable energy solutions. On the second point, a number of techniques are in existence for storing energy as heat (for example in the latent heat of molten salt) so that solar thermal sations can operate over a 24 hour cycle and provide baseload capability. Wind generators can contribute to baseload capacity directly. Existing hydroelectric generators can be utilised to provide pumped storage. We believe that a properly engineered mix of these and other techniques will enable any arbitrary demand profile to be met. Accordingly we are confident that it is not necessary to specify this new station as 'baseload', and that a more sophisticated approach will deliver better value for money. We expect that Mt Piper would not provide a sufficient are to supply the entire 2000 Mw specified. However, Mt Piper could be the location of one of a handful of stations that together meet the total energy production requirements that would otherwise be provided by the fossil fuelled Mt Piper extension. A number of wind farm developments are currently in various stages of development. Further wind farm projects may emerge as a result of the review currently being conducted by the NSW government. For solar thermal stations, other locations in Western NSW which are on suitable terrain and close to high capacity power transmission lines should be identified and developed. If the site at Mt Piper is suitable, a solar thermal adjunct similar to that now operating at the Liddell station in the Hunter Valley could be a good way to quickly get operational experience with the best way to integrate solar thermal capacity into the overall network.	
155	Strategic justification – demand management & energy efficiency	Baseload power requirement: we note that the advertised proposal is described as a baseload power station. We understand it is often stated by proponents of fossil fuelled energy that renewable energy systems are not capable of supplying baseload power. Firstly, we are very doubtful that the real requirement in this case is for a baseload station, that is a station capable of providing the same level of power output in every hour of the 24 hour daily cycle. secondly, we are confident that renewable energy systems, including a mix of wind, solar thermal and existing major hydroelectric generators are capable of providing the required power to run NSW (and indeed Australia) throughout the daily cycle. The transition to a fully renewable generation cohort will be made easier by the existing base of coal burning stations which have useful operational life remaining. On the first point (what is the real requirement for generation in each hour of the daily cycle) we believe the current demand profile has been distorted by the preponderance of coal fired stations, for which inconvenience and cost is incurred when there is a need to reduce power output. Accordingly, major users in industry and to some extent residential users have been encouraged by tariffs to increase their night time power consumption. In the long term this pattern is likely to change, so that power consumption is encouraged by lower tariffs during periods of cheaper power generation, and discouraged by higher tariffs during periods of more expensive power generation. This may no longer be a simple peak/off peak formula based on continuous generation capacity, and may include remote control of non-time-critical appliance to take opportunistic advantage of generation peaks in renewable power capacity. Given the possibility of influencing the daily demand profile through tariffs, which would be done over a number of years, we believe that all of the growth in electricity demand can be accommodated by renewable energy solutions. On the second point, a number of techniques are in existence for storing energy as heat (for example in the latent heat of molten salt) so	3.13

Submission number	Issue	Submission details	Response
		that solar thermal sations can operate over a 24 hour cycle and provide baseload capability. Wind generators can contribute to baseload capacity directly. Existing hydroelectric generators can be utilised to provide pumped storage. We believe that a properly engineered mix of these and other techniques will enable any arbitrary demand profile to be met. Accordingly we are confident that it is not necessary to specify this new station as 'baseload', and that a more sophisticated approach will deliver better value for money. We expect that Mt Piper would not provide a sufficient are to supply the entire 2000 Mw specified. However, Mt Piper could be the location of one of a handful of stations that together meet the total energy production requirements that would otherwise be provided by the fossil fuelled Mt Piper extension. A number of wind farm developments are currently in various stages of development. Further wind farm projects may emerge as a result of the review currently being conducted by the NSW government. For solar thermal stations, other locations in Western NSW which are on suitable terrain and close to high capacity power transmission lines should be identified and developed. If the site at Mt Piper is suitable, a solar thermal adjunct similar to that now operating at the Liddell station in the Hunter Valley could be a good way to quickly get operational experience with the best way to integrate solar thermal capacity into the overall network.	
33	Strategic justification - demand management and energy efficiency.	If the NSW government considers that there will be a problem with continuing electricity supply, then it should urgently take action to reduce demand, by encouraging energy efficiency and energy saving measures, and increasing the cost of electricity substantially to the point where the true cost of its generation to society is reflected. If such measures had been taken ten years ago, when we made commitments to reduce emissions, then power consumption would never have risen by fifty percent as it has.	3.13
29	Strategic justification - demand management and energy efficiency.	Large power stations of this nature are inefficient. I understand 80% of the energy created is wasted in hot air through the stacks, with additional loss of power through transmission lines.	3.13
156	Strategic justification – demand management and energy efficiency	"The other alternatives offer short term solutions or provide small base load benefits or are not suitable for providing base load capacity due to their variable output". This statement is very wrong. It is very feasible to implement renewable energy/load matching alternatives to this proposal. Spain – a country with fewer people and smaller area than Australia – has over 16MW installed renewable energy capacity. So it is feasible to produce the amount of energy proposed by renewable energy. There are several methods of demand/supply matching. These include: Gas –used not as baseload but as a load matching tool; Demand management measures, such as requiring Aluminium production to drop during peak demand periods, and running off peak hot water heater at times when renewable energy production is highest; Heat storage technology. The EIS summary (page 9) compares the emissions from this power station with our national emissions, implying that the additional power from this proposal is an insignificant increment to the grid. It is inconsistent to claim at the same time that a renewable energy alternative to this power station proposal would create an unsurmountable load matching problem.	3.13
158	Strategic justification – demand management and energy efficiency	No analysis has been presented on the economics of reducing NSW electricity demand through measures such as having smart networks/applicances/meters, and replacing home hot water systems with solar systems. I would like to be convinced that efficiency measures are not viable alternative options to a Mt Piper extension, at least over the next decade. Postponement of an extension would provide the opportunity to reap the technology harvest of worldwide investment in renewable, nuclear and CCS.	3.13

Submission number	Issue	Submission details	Response
366	Strategic Justification – demand management and energy efficiency	Rather than building new polluting power stations to cater for increasing energy demand, NSW would be better served by policies aimed at reducing the demand for electricity through the smart management of the demand for energy and energy efficiency measures. Policies such as higher energy efficiency standards for new houses and renovations; subsidising solar hot water and insulation, regulating higher appliance efficiencies and industrial process efficiencies, can all reduce energy demand and reduce peak loads. Awareness of energy consumption can lead to a dramatic and immediate drop in energy use. A multitude of studies, for example, show how interval meters designed to manage peak demand also reduce average demand by 5-10%. A recent world-wide study by The Carbon Trust, *'Advanced Metering for SMEs: Carbon and Cost Savings',* for example, focused on savings in total energy use rather than peak load reductions and found that advanced metering identified an average of 12% carbon savings and implemented an average of 5% carbon savings. Another recent *'Smart Meters: Commercial, Policy and Regulatory Drivers'* (Owen and Ward) summarised reviews of over 50 individual studies in a range of countries in which additional information about household energy use was provided. In 21 studies, 7 that involved direct feedback about energy use, the majority showed savings in total energy use in the range of 5-14%. In Australia, the Energy Australia Strategic Pricing Study found that even with only a critical peak pricing trial, reductions of between 5.5% and 7.8% in total daily energy consumption were achieved on days when a critical peak pricing event was called. The Ministerial Council on Energy is now progressing with preparations for the roll-out of interval meters in National Electricity Market jurisdictions, including NSW. If the above studies are any indication, it is likely that significant reductions in average demand of between 4-10% could be achieved with this measure alone.	3.13
150	Strategic justification – Demand management and energy efficiency	Success of the Federal Government's Greenpower scheme proves a lot of people are willing to pay a moderate premium for electricity production that is better for the environment. In addition, energy conservation measures, if implemented seriously, would likely reduce or eliminate the short to medium perceived requirement for increases in base load power generating capacity.	3.13
158	Strategic justification – demand management and energy efficiency	Table 4_10 GHG Emissions Summary of Appendix F – Greenhouse Gas Assessment (SKM) states that the scope 1 for emissions for a gas power station will be 4910 000 tonnes CO2 – per year. Also according to the same table, scope 3 emissions will add an extra 2 088 000 tonnes CO2 – e a year. That is a greenhouse overhead of around 40%. This overhead is critical in determining the viability of the natural gas option for the Mt Piper extension. I want to be assured the estimate of 40% overhead is reasonable. The scope 3 emission estimate was derived by SKM by the application factor in Table 37 (NSW large user) of the Australian Department of Climate Change's National Greenhouse Account (NGA) Factors (June 2009). There is no dispute if this the correct factor to apply then it leads to the SKM 40% overhead. However, the NGA factors document also provides estimates of Oil and Natural Gas fugitive emissions (section 2.4.2). Table 15 of that section provides natural gas production and processing emission factors (excluding flaring and venting) and Table 16 provides transmission emission factors. I wonder, and I am certainly not sure, whether these are more applicable for the fugitive emission estimation for natural gas deliver to a power station, where no further distribution is required. It just seems that general forecasts of growth in the use of natural gas and for the stagnation of coal for electricity use do not seem consistent with only a 30% reduction in emissions for gas (cal emissions for Mt Piper are about 10,000,000 tonnes CO2-e per year) couple with the non-economic viability of CCS for gas.	3.13
144	Strategic	The EA fails to address many other critical 'life of project' issues as well, for instance: Carbon Capture and Storage (CCS) is likely to be	3.13

Submission number	Issue	Submission details	Response
	justification – demand management and energy efficiency.	required during the 50 year life of this project. The 2009 National Water Commission report 'Water and the Electricity Generation Industry - Implications of Use' states that CCS can increase power station water intensity (ML/GWh) by one-third; CCS technology uses 25% more energy, therefore higher C02 emissions, more water used, and more water polluted by power stations and the coal mines that supply it. This proposal is for dry-cooled, which reduces sent-out efficiency (ratio of fuel consumed to energy sent out) by 2 - 3%, and increases C02 emissions by up to 6%. For retrofitting dry-cooling the efficiency penalty can be as high as seven per cent. This proposal appears to be incredibly energy inefficient over the 'life of the project' because: - Future CCS needs - The 2009 National Water Commission report says that CCS technology can increase power station water intensity (ML/GWh) by 33%; - CCS technology uses 25% more energy, meaning higher C02 emissions, more water used, more energy used to pump additional water, more water polluted by the power station and coal mines; - This proposal is dry-cooled, which reduces sent-out efficiency (ratio of fuel consumed to energy sent out) by 2 3%, and increases C02 emissions by up to 6%. For retrofitting dry-cooling the efficiency penalty can be as high as seven per cent.2; - This proposal will rely heavily on Reverse Osmosis plants, due to increasing salinity in the Coxs River water supply. Desalination plants consume 5 MWh per ML of freshwater produced (Qid Water Commission, 2008). RO plants at Mt Piper will increase energy used, coal burned, C02 emissions, and water pollution by at least 1%; - This proposal will rely heavily on pumping large quantities of water long distances from Springvale and Clarence Colliery, and from Lake Lyell to Thompson's Creek Dam - increasing energy used, coal burned, and C02 emissions; - This proposal will rely heavily on coal from outside the region, because Lithgow does not have enough coal to supply this project for its 50+ year life, meaning less local jobs, more energy used for coal transport, more water pollution, more C02 and other emissions;	
200	Strategic justification – demand management and energy efficiency	The NSW government should re-assess options for new power supply in the State on the basis that the Owen Report was developed before there was a National commitment to carbon pricing and within a substantially different economic climate. A new assessment should look into the feasibility of decentralised low carbon technologies and peak demand management before any approval is granted to construct a new centralised base load power station.	3.13
22	Strategic justification – demand management and energy efficiency	The pessimistic predictions from ABARE hat the NSSW electricity demand will continue to grow have been widely criticised. These 'business as usual" predictions take no account of energy efficient 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. The concept of baseload power is flawed idea that merely reflects that coal fired power stations take hours to adjust their power output. This leads to the situation of excess generation at night, and the need for creative ways to use this capacity such as off peak pricing. Off peak electricity is every bit as polluting as peak electricity, and a better solution would be to shut down generation when there is reduced demand. Aluminium smelting is a substantial portion of 'baseload' demand but has no long term future using coal fired electricity, so should not be the basis of planning.	3.13
58	Strategic Justification – demand	There is no need to do this anyway, with increased energy efficiency and the deployment of renewable energy, we can provide for all our energy needs responsibly and economically.	3.13

Submission number	Issue	Submission details	Response
	management and energy efficiency.		
135	Strategic Justification – Demand management and energy efficiency	This proposal appears to be incredibly energy inefficient over the "life of the project" because: • Future CCS needs - The 2009 National Water Commission report states that CCS technology can increase power station water intensity (ML/GWh) by 33%, so more 33% energy will be used to pump all that additional water; • CCS technology uses 25% more energy, meaning higher CO2 emissions, more water used, more energy used to pump that additional water, and more water polluted by the power station and the coal mines that supply it; • This proposal is for dry-cooled, which reduces sent-out efficiency (ratio of fuel consumed to energy sent out) by 2 - 3%, and increases CO2 emissions by up to 6%. For retrofitting dry-cooling the efficiency penalty can be as high as seven per cent.; • This proposal will rely heavily on Reverse Osmosis plants, due to increasing salinity in the Coxs River water supply. Desalination plants consume 5 MWh per ML of freshwater produced (Qld Water Commission, 2008). As an example, desalinated water to supply Tarong Power Station would use 1% of power generated for desalination plants; • RO plants at Mt Piper will increase energy used, coal burned, C02 emissions, and water pollution by at least 1%; • This proposal will rely heavily on pumping large quantities of water long distances from Springvale and Clarence Colliery's, and from Lake Lyell to Thompson's Creek Dam - increasing energy used, coal burned, C02 emissions; • This proposal will rely heavily on coal from outside the region, because Lithgow does not have enough coal to supply this project for its 50+ year life, meaning more energy used for coal transport, more water pollution, C02 and other emissions;	3.13
209	Strategic justification – electricity supply capacity	The lemma government set up the Owen Inquiry suggesting that the state would experience a shortfall of electricity supply capacity and blackouts sometime in the next ten years if a new baseload plant were not built. The government based this prediction on a report prepared by the national electricity market operator, NEMMCO (now AEMO), called the 'Statement of Opportunities' (SOO). This report actually identified a relatively small shortfall in peak demand and stated that it could be met by better managing energy use and making businesses and homes more energy efficient. A careful reading of the SOO report reveals that the lemma government fiddled the evidence to imply that NEMMCO was arguing for new baseload plant. The additional capacity that would be installed in NSW if both this project and the planned Munmorah expansion were to go ahead would by an additional 4700 MW. This additional capacity would far exceed the supply reliability needs of even the most pessimistic demand forecasts out to 2020. To approve this level of additional fossil fuel electricity generation at a time when the renewable generation technologies are being scaled up and demand management is becoming the norm in other jurisdictions would lock NSW into a fossil fuel generation future.	3.13

Submission number	Issue	Submission details	Response
		New baseload capacity is not needed if this state begins to phase out inefficient electric off-peak water heating. The Australian Energy Market Operator recently released its 10-year outlook confirming that NSW does not face a looming gap between supply capacity and demand. The report shows that energy demand in NSW has fallen in NSW by 4.3% since the last SOO report. There is no shortage of generating capacity for the next decade and no need for a massive fossil fuel generator-building program. The application for a new power station is based on fulfilling the objective of increasing so called baseload generation capacity for NSW. However the plan is based on the myth that the "lights will go out" unless new coal-fired power stations are built.	
366	Strategic Justification – renewable energy	Carbon capture and storage at a commercial scale power station is unproven and at least a decade or two away. If we are to drastically reduce emissions to avoid catastrophic climate change we must move to sourcing a much larger share of power from clean renewable energy sources. Renewable energy is already a growth industry. Australia should be investing in large scale renewable projects to ensure we are not left behind and can build a viable clean energy sector and provide many green jobs. Renewable energy can not only provide additional power to our national electricity market, but should be replacing dirty fossil fuel power stations. We would like to see plans for large scale renewable energy projects rather than plans for new fossil fuel power stations and believe as public corporations, Delta Electricity and Macquarie Generation have a duty to draw up plans for clean energy generation for the people of NSW. Wind Power is a mature renewable energy technology. Denmark supplies 20% of its power through wind, German and Spain are also investing heavily in wind energy. The United States has an installed capacity of around 29,440 MW, with the state of Texas having 7,116 MW of capacity. Over 8,500 MW of new wind power capacity was brought online in 2008, and over 85,000 are employed in the industry. China is also dramatically increasing its installation of wind power. The initial future target set by the Chinese government was 10 GW of wind power by 2010, but estimates suggest that by 2010 the total installed capacity for wind power generation in China will reach 20 GW. China aims to have 100 gigawatts of wind power capacity by 2020. While wind farms do not always produce their maximum power, geographic distribution, energy storage and combination with other renewable energy technologies can improve the regularity of supply. Australia receives a lot of sunshine. Solar thermal power stations are an ideal clean energy option for NSW. They already operate in the USA and Spain, with the largest of these in the Mojave Desert has been supplying 354 MW for decades. There is a consortium of European energy and engineering companies currently investigating building solar thermal power stations in the Sahara to supply Europe with clean power. The technology is relatively simple and heat storage means it has the capacity to supply power overnight.	3.13

Submission number	Issue	Submission details	Response
50	Sustainability	Coal fired power stations endangers the climate and the future of my children and life on this planet.	3.14
146	Sustainability	Delta cite the proposed upgrade as 'the best means of supplying electricity at commercially competitive rates'. When the climate scientists of the world are warning of dangerous levels of carbon emissions, the 'best means of supplying electricity' should be based on an environmentally sustainable rationale.	3.14
101	Sustainability	Every day is a constant reminder about the importance of sustainability and planning for our future generations. Our children deserve the kind of foresight and good governance that will serve them into the future and provide a precedent to follow when they are in our position.	3.14
53	Sustainability	Future generations will be greatly penalised	3.14
40	Sustainability	I expect my state government to act in a similar fashion and demonstrate responsibility and concern for future generations. I strongly urge that NSW take a leadership role and make a decision with future generations in mind.	3.14
14	Sustainability	If our children were given an informed choice for their future I'm sure they would not want this.	3.14
39	Sustainability	Our beautiful and productive region, Gloucester, is under threat from coal mining. This food and water producing area needs to be preserved for future generations and governments should be sponsoring businesses to increase food production – not mining more coal. Mineral extraction such as coal in not compatible with food and water. It is detrimental to long term human interests and general economic development. There are many more sustainable methods of energy production that will take us into and beyond the 21st century. The powerful and rich coal lobby continues to influence political decisions at the expense of the general population. The coal industry's current spin and advertising for 'clean coal' is not only spurious it is insulting. Jobs will not be lost just distributed differently. Any new coal fired power station will encourage more coal extraction and continue to threaten those communities that stand in its way. Historians will look back on these decisions and judge. So will our children and our children's children.	3.14
112	Sustainability	Our children and grandchildren will suffer from the effects of unrestraining burning of coal.	3.14
56	Sustainability	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. Change is inevitable and those that impede the necessary sustainable action will be exposed for their greed and ignorance.	3.14
107	Sustainability	Our children deserve to inherit a healthy world and climate. I fear that the continued investment in dirty fossil fuels threatens the existence of my family and that of my fellow earth creatures.	3.14
130	Sustainability	Our children won't thank us if we let this one go through, because they will have to bear the consequences.	3.14
62	Sustainability	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.	3.14
115	Sustainability	The NSW government needs to put environmental sustainability ahead of immediate economic gain. The survival of human civilisation and many of this plant's species rests on decisions such as these.	3.14
150	Sustainability	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 percent 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?	3.14
34	Sustainability	We as responsible citizens and guardians of the earth need to act now to ensure a future will exist for our children and our children's children	3.14

Submission number	Issue	Submission details	Response
122	Sustainability	We need to think of future generations and how they are going to exist.	3.14
118	Sustainability	We want clean energy for ourselves and our children and grandchildren.	3.14
100	Sustainability	You ask me to be careful and accurate – I request you to be careful (precautionary principle) and accurate in this decision.	3.14
1	Sustainability and consistency with ESD principles	The proposed plants are at odds with the principles of ESD.	3.14
32	Sustainability.	Failure to address the global climate and sustainability emergency will result in a very bleak future for humanity. Failure is not an option. The government can no longer think in terms of the next election, but in terms of the next generation, or the next century. We have to think sustainably.	3.14
196	Transport	Coal trains traversing though our region in association with the Mt Piper Power Station Extension project. The introduction of coal trains would dramatically change the life in many urban areas.	3.15
75	Transport – rail unloader	The Proponent (Delta Electricity) is constructing a Rail Coal Unloader for the Mt Piper power station near Wallerawang at Pipers Flat (approved in June 2009 PA 06_0271). The coal unloader would allow the power station to access coal from distant mines, with transportation of the coal occurring by rail to the proposed sites and then by conveyor to the power station. The capacity of the coal unloader will be 2500 tonnes per hour. The current demand for coal at Mt Piper Power Station is approximately 3.7 milion tonnes per annum (mtpa), while at Wallerawang Power Station it is approximately 2.3 mtpa. Forecast increases in electricity demand together with the recently approved upgrade of Mt Piper, providing a 14% increase in capacity, may increase the total coal demand by up to 0.6mtpa. The reference of 2.1.4 in the coal unloader environmental assessment states “The requirement for the coal unloader is not dependent on the construction of units 3 and 4 of the power station.” The figure 2.2 shows that the proposed generating units 3 and 4 are totally reliant upon the coal unloader. The concept proposal for the power plant extension admits that “the coal required for the new units would be sourced from a competitive market and would probably be transferred via rail to the proposed coal unloader at Pipers Flat. The coal unloader approval has helped to ‘lock in’ coal dependency for the expanded power plant. The coal unloader is a necessary part of any coal fired expansion of Mt Piper units 3 and 4. The approval of the unloader should have been deferred until the nature of its operation of the proposed power plant expansion was determined. Figure 2.2 also indicates that the decision on the coal unloader did not need to be made at least until 2012. Deferral of coal unloader determination would have permitted a more thorough review of the power demand management, the sizing of the power plant, the nature of its operation and whether gas could be provided as an energy source for the plant.	3.15
144	Transport - traffic	For Blackmans Flat residents this will mean 45% more coal trucks; 45% more fly-ash tankers, and Sulphuric Acid, Chlorine, Sodium Hydroxide, Diesel and other tankers; massive construction traffic impacts over the 5 year construction period, including from the 950 staff; and traffic increases from the 50 extra staff required to operate the facility once completed.	3.15
172	Transport – trucks	Concerned with increased truck and train movements in and around Portland.	3.15
20	Visual –effects on	I object to the new coal fired power stations because of their ugly mining landscapes.	3.16

Submission number	Issue	Submission details	Response
	landscape		
135	Waste management	Almost doubling the amount of fly-ash waste produced has already been discussed. However, LEG once again reiterates that fly-ash should be classified as a hazardous waste, and dumps should be separately licensed to the main power station plant. It is a sad indictment on the NSW Government that household garbage is more fully regulated than coal ash. Brine concentrates are another huge waste problem that will become unsustainably high. Already Mt Piper Power Station produces 15 ML/year of highly saline brine waste with a salinity of 137,000 mg/L - three times saltier than seawater off Sydney. Brine is a waste product from the Reverse Osmosis and Demineralisation plants, and cooling tower blow-down. It has been Widely reported that Brine production at both Mt Piper and Wallerawang Power Stations has significantly increased over the last 10 years, due to the drought. In January 2009 the Lithgow Mercury reported that the capacity of Mt Piper's Reverse Osmosis Plant had been almost tripled, presumably meaning the amount of Brine concentrate also tripled. The Kurnell Desalination Plant debate highlighted that disposal of concentrates was one of the most challenging issues facing desalination plants. As well as highly saline waste, these plants generate other waste including heavy metals, backwash liquids, scale and corrosion inhibitors, anti-fouling chemicals, water pre- treatment chemicals, and filter sludges. Disposal of Brine at sea is difficult enough, but disposal in a freshwater environment in an inland area such as Lithgow, within the drinking water catchment of 4 million Sydney water users, other industrial and agricultural water users, sensitive groundwater-dependent plant communities, and aquatic life including the Platypus - creates a huge range of risks. The SOEE for the *Modification of Mt Piper Ash & Brine Disposal Area (MOO-77-9-2007-i)* lists the chemical constituents of this Brine - high levels of arsenic, beryllium, boron, cadmium, chromium, fluoride, iron, lead, manganese, nickel, selenium, sulphates and zinc. On page 13 it states that since 1999 the Salinity levels in Mt Piper's Brine increased by 17%, Sulphates by 34%, Boron by 55%. and Fluoride by a staggering 126 times - from 21mg/L in 1999 to 126mgjL in 2006. The ANZECC (2000) Drinking Water upper limit is 1 ppm (lmg/L) for Fluoride, so Mt Piper is generating 126 times this acceptable limit. Fluoride levels flowing into the Coxs R below Lake Wallace from Wallerawang's No.8 blowdown are similarly bad. In addition this power station proposal will use staggering volumes of hazardous water treatment chemicals every year. For example the SOEE for the Modification of Mt Piper in 2006 states that Mt Piper uses numerous truckloads of Sodium Hydroxide, Sulphuric Acid, Chlorine, Ferrous Sulphate and Carbohydrazide every year. The Material Safety Data Sheet (MSDS) for Carbohydrazide says *"Harmful* to *aquatic organisms, may cause long-term adverse effects in the aquatic environment" and "Do not allow* to *enter sewers or watercourses".* So where do these 10 truckloads a year end up?	3.17
144	Waste management	I have already pointed out the almost doubling of the amount of fly-ash waste produced, and the rate at which it has to be disposed of. However I once again reiterate that fly-ash should be classified as a hazardous waste, and fly-ash dumps should be separately licensed to the main power station plant. It is a sad indictment on the NSW Government that household garbage is more fully regulated than coal ash. Brine concentrate is another waste that will be unsustainably high. Already Mt Piper Power Station produces 15 ML/year of brine waste with a salinity of 137,000 mg/L - three times saltier than seawater off Sydney beaches. It has been widely reported that Brine production at both Mt Piper and Wallerawang Power Stations has significantly increased over the last 10 years, due to the drought. In January 2009 the Lithgow Mercury reported that the capacity of Mt Piper's Reverse Osmosis Plant had been almost tripled, presumably meaning the amount of Brine concentrate also tripled. The Kurnell Desalination Plant debate highlighted that disposal of concentrates was the most challenging issue facing desalination plants. These plants generate other waste including heavy	3.17

Submission number	Issue	Submission details	Response
		metals, backwash liquids, scale & corrosion inhibitors, anti-fouling chemicals, water pre-treatment chemicals, and filter sludges. Disposal of brine at sea is difficult enough, but disposal in a freshwater inland environment such as the Lithgow area, within the drinking water catchment of 4 million Sydney water users and other industrial and agricultural water users, where there are sensitive groundwater-dependent plant communities, and sensitive aquatic life including the Platypus, creates a huge range of risks. The SOEE for the Modification of Mt Piper Ash & Brine Disposal Area (MOD-77-9-2007-i) lists the chemical constituents of this Brine – high levels of arsenic, beryllium, boron, cadmium, chromium, fluoride, iron, lead, manganese, nickel, selenium, sulphates and zinc. The SOEE stated that since 1999, Salinity in Mt Piper's brine increased by 17%, Sulphates by 34%, Boron by 55%, and Fluoride by 126 times - from 21mg/L in 1999 to 126mg/L in 2006. The ANZECC (2000) Drinking Water upper limit is 1 ppm (lmg/L) for Fluoride, so Mt Piper is generating 126 times this acceptable limit. Fluoride levels flowing into the Coxs R from Wallerawang?s No.8 cooling tower blowdown is similarly high. In addition this proposal will use staggering volumes of hazardous water treatment chemicals every year. For example the SOEE for the Modification of Mt Piper In 2006 states that Mt Piper uses numerous truckloads of Sodium Hydroxide, Sulphuric Acid, Chlorine, Ferrous Sulphate and Carbohydrazide every year.	
164	Waste Management - Ash	A call for greater separation distances between longwall mining and rivers. Delta Electricity in the Lithgow region appear to dispose of their fly-ash very close to homes in Lidsdale and Blackmans Flat and do not be very proactive in marketing or seeking alternative uses for fly-ash at all. Providing adequate separation distances and buffer zones between fly-ash dumps and residential properties in an obvious solution to the mounting stockpiles in the Lithgow region. Brine concentrates are a serious waste problem which must be addresses, as the associated water pollution is already unsustainably high. Adequate separation distance between sensitive receivers and power stations.	3.17
94	Waste management – Ash	A large quantity of ash will be produced by this plant over its lifetime. The plans for how it will be disposed need to be made public, and the extent of harmful contents such as heavy metals and radioactive materials disclosed.	3.17
155	Waste management – Ash	A large quantity of ash will be produced by this plant over its lifetime. The plans for how it will be disposed need to be made public, and the extent of harmful contents such as heavy metals and radioactive materials disclosed.	3.17
202	Water	Delta's annual Water Extraction Licence from the Coxs River. is currently 23.000 ML/year (Sydney Catchment Audit. 2007). This makes it the largest water used in the Sydney Basin. The project description and preliminary environmental assessment states that Mt Piper Power Station Extension would not involve taking additional water from the existing Coxs River Water Supply Scheme or the Fish River Schemes. The assessment claims that the relatively small quantity of water required for power station operations can be obtained from other sources (such as Springvale Colliery). This proposal will rely heavily on pumping large quantities of water long distances from Springvale and Clarence Colliery's, and from Lake Lyell to Thompson's Creek Dam – increasing energy used, coal burned, C02 emissions and water pollution.	3.18

Submission number	Issue	Submission details	Response
83	Water	I read in the news how Coxs river is so polluted due to power station discharge. Are we not going to have twice the amount of pollution?	3.18
399	Water	Section 5.1.2 of the Mt Piper Environmental Assessment states that long wall mining and pillar extraction has caused ground subsistence to an extent that the permeability of the ground has increased by 'three orders of magnitudes'. This increased permeability may be good for water extraction for use in power stations, but the Nature Conservation Council if very concerned about the effect it is having on the natural environment of Newens Plateau area. An increase in the extraction of water to service the new Mt Piper Power station is of great concern and a thorough environmental assessment must be conducted on this issue in terms of the effects on Newens Plateau, and the effects downstream of the coal mines and power station complex.	3.18
75	Water	The premature construction of a water pipeline on Newnes Plateau form bore six be stopped, pending an investigation of its legality.	3.18
164	Water	There are currently insufficient water supplies for the existing Wallerang and Mt Piper Power Stations. Delta Electricity is already the single largest water user in the Sydney catchment. Four million Sydney water users rely on the Coxs River catchment for drinking water. The future growth of the Oberon timber industry is heavy reliant on the Fish River supply. The high salt content in the Coxs River is a direct result of water pollution from Wallerawang Power Station, Kerosene Vale Fly-ash Dam and the coal mines which supple these power stations. Coal fired power stations use and pollute large volumes of water.	3.18
205	Water – consumption	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 light of the critical shortfall that came close to shutting down the existing power station in the 2005/2007 drought. The actually water usage in a Pulverised Coal Fired Ultra Supercritical Thermal technology is assumed and far from proven. The proposal does not allow for the externalities in the mining and washing of the coal needed for the production of the Pulversied Coal or to operate a dry fired system.	3.18
212	Water – consumption	The EA does not account for actual flowing or currently available water in storage that can be used by the power station. Will flow and storage capacity always be available in order to consistently supply the power station, when it is currently below average levels?	3.18
94	water – environmental flows	Above ground impacts of below-ground mining operations – we are concerned that there will be unforse3en water flow impacts and other environmental effects arising from uneven subsidence, rock strata cracking etc.	3.18
155	water – environmental flows	Above ground impacts of below-ground mining operations – we are concerned that there will be unforse3en water flow impacts and other environmental effects arising from uneven subsidence, rock strata cracking etc.	3.18
213	Water – pollution	Major concern is the current water supply to the project and the possible adverse effects on residents and properties currently served by the 'Fish River Water Supply'.	3.18
56	Water - supply	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.	3.18
213	Water - supply	Water supply to the project should not be permitted to diminish the availability to others in the region.	3.18

Submission number	Issue	Submission details	Response
43, 44, 47, 51, 53, 57, 60, 64, 65, 69, 72,	Water consumption	New coal fired power stations and associated mines will consume more of our precious and dwindling water supplies.	3.18
135	Water consumption	The Director-General's Requirements state the proponent must demonstrate the availability of viable water sources to sustainably meet the water requirements for the "life of the project". Despite varying claims in the Preliminary Assessment that this proposal will either use no extra water, 10% more, or an additional 1,100 Ml/year - there currently is not enough water to supply the existing Wallerawang and Mt Piper Power Stations - let alone supply a new 2000 MW power station 1.5 times larger than the existing 1320 MW Mount Piper Power Station. There appear to be major omissions in the EA for this "life of the project" component: • Future Carbon Capture and Storage (CCS) - The 2009 National Water Commission report *"Water and the Electricity Generation Industry - Implications of Use"* 2 states that CCS can increase power station water intensity (ML/GWh) by one-third (33%); • CCS technology uses 250/0 more energy', meaning higher CO' emissions, more water used, and more water polluted by power stations and the coal mines supplying it; • This proposal is for dry-cooled, which reduces sent-out efficiency (ratio of fuel consumed to energy sent out) by 2 - 3%, and increases CO' emissions by up to 6%. For retrofitting dry-cooling the efficiency penalty can be as high as seven per cent. '; • This proposal will rely heavily on Reverse Osmosis plants, due to increasing salinity in the Coxs River water supply. RO plants consume around 5 MWh per ML of freshwater produced (Qld Water Commission, 2008). For example, desalinated water to supply Tarong Power Station would use 1% of the power generated to provide energy for the desalination plant'. RO plants at Mt Piper will clearly increase energy used, coal burned, CO' emissions, and water pollution by at least 1%; • This proposal will rely heavily on pumping large quantities of water long distances from Springvale and Clarence Colliery's, and from Lake Lyell to Thompson's Creek Dam - increasing energy used, coal burned, CO' emissions and water pollution; • This proposal will rely heavily on coal from outside the region, because Lithgow does not have enough coal to supply this projects 50+ year life, meaning more energy used for coal transport, and more C02 and other emissions; Delta Electricity currently holds the single biggest Water Extraction Licence of any water user in the entire Sydney catchment. The orange spike below (from *Sydney Catchment Audit 2007)* represents Wallerawang and Mt Piper power station's annual Water Extraction Licence from the Coxs River. Delta Electricity currently extracts 23,000 ML from the Coxs River and 8,184 ML from the Fish River. The additional 1,100 ML required for a new unit will mean total water use of 32,284 ML. And more will be required in the future. The National Water Commission' states that the impact of CCS on water and emissions intensity for a super critical coal-fired power station is likely to be severe. It gives the example of a power plant producing 2000GWh per year using 1500 ML (total water intensity = 0.85ML/GWh) of water for cooling will now only send out 1500GWh but use the same volume of water to do it (i.e. a water intensity of 1.0 ML/GWh). So· once CCS technology is installed at an expanded Mount Piper Power station during the life of this project, CCS technology alone will require at least an additional 10,654 ML of water. Where will this additional water be obtained? And all of this is at the expense of other urban, industrial and agricultural uses, and the urgent need to increase environmental flows due to lower inflows as a result of climate change.	3.18

Submission number	Issue	Submission details	Response
		Not the least of those other competing water users are the 4 million water users in the Sydney drinking water catchment, and the Oberon timber industry which has already had its future growth severely constrained by Delta Electricity's insatiable cooling water demands. The current water supply situation is best summed up by the National Water Commission' - *"Mt Piper and Wallerawang power stations are located in drought prone areas" and "During the worst* of *the 2007 drought. generation* at *Wallerawang was parlly curtailed because* of *the high salt content* of *the water and the unavailability* of *suitable quantities* of *water from the Fish River for dilution."* Wind generation, solar photovoltaic panels and energy efficiency take almost no water to operate. Hot-rock geothermal, biomass and solar thermal use some water, but far less than coal. This proposal will lock the Lithgow region and NSW into a further vicious cycle of droughts, water shortages, interruptions to supply, rising power prices, and reduced water availability for Sydney water consumers, other industry, agriculture and environmental flows. Surely all of the above factors must be taken into consideration for the life of this project?	
144	Water consumption	The Preliminary Assessment claims that this proposal will only use an additional 1,100 ML of water per year. It fails to identify that there is currently not enough water to maintain the existing Power Stations - let alone to supply a new 2000 MW power station, 1.5 times larger than the Mount Piper Power Station. Consider this: - Lake Lyell has not been full since 1997; - Oberon Dam is at 12% and falling; Duckmaloi Weirs are being sucked dry threatening regional extinction for a Platypus colony; Natural flows in the headwaters of the Coxs R, Wolgan R, Wollanagmbe R, Grose R, Lambs Ck, Kangaroo Ck, Nuebecks Ck, Marrangroo Ck and Farmers Ck have been severely impaired by mining. Mine water is being sucked at unsustainably high rates from underneath Newnes Plateau, threatening endangered groundwater-dependent Blue Mountains sedge and shrub swamp communities, and Lithgow residents will soon be forced to drink water laced with Nickel and Zinc from Clarence Colliery. All this to prop up the unsustainable water demands of Wallerawang & Mt Piper Power Stations. And all of this at the expense of other existing and potential urban, industrial, agricultural and tourism uses, and the urgent need to increase environmental flows, due to lower river flows as a result of climate change. Not the least of those other competing water uses is drinking water for the 4 million water users in the Sydney catchment, as well as the Oberon timber industry which has already had its future growth severely constrained by Delta Electricity's insatiable cooling water demands. Approving this proposal will lock the Lithgow region and NSW into a further vicious cycle of droughts, water shortages, interruptions to supply, rising power prices, and reduced water availability for Sydney water consumers, other industry, agriculture and environmental flows. Given what has happened to local water supplies over the last 10 years, then surely the precautionary principle should apply. This proposal will rely heavily on Reverse Osmosis plants, due to increasing salinity in the Coxs River. RO plants consume around 5 MWh per ML of water produced (Qld Water Commission, 2008). RO plants at Mt Piper will increase energy used, coal burned, C02 emissions by > 1%; This proposal will rely heavily on pumping large quantities of water long distances from Springvale and Clarence Collieries, and Lake Lyell to Thompson's Creek Dam- increasing energy used, coal burned, and C02 emissions. This proposal will use and pollute large volumes of a highly limited valuable resource - water. It is regionally urgent and essential to move towards technologies that are not water dependent and don't pollute water. Local long wall mines have Subsidence Management Plans (SMPs), but water quality is not an issue allowed to be considered. Other mines have Community Consultative Committees (CCC?s), but community representatives are discouraged from raising water quality issues for individual mines, or mines operated by the same company, Wallerawang and Mt Piper Power Stations hold the single biggest Water Extraction Licence of any water user in the entire Sydney catchment 7 23,000 ML. In addition Delta Electricity takes a further 8000+	3.18

Submission number	Issue	Submission details	Response
		ML/year from the Fish River and Murray-Darling Catchment.	
136	Water consumption	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' system. Carbon Capture and Storage (CCS) is estimated to increase water use in power stations by around 18%.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 especially in the light of the critical shortfall 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. 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.	3.18
94	Water consumption	we believe that the water used for cooling a fossil fuel generator would be better employed in agriculture and/or in looking after environmental flows. We are already seeing water supplies at crisis point in a number of places. This is a bad way to consume a significant amount of water, especially as it is unnecessary.	3.18
155	Water consumption	we believe that the water used for cooling a fossil fuel generator would be better employed in agriculture and/or in looking after environmental flows. We are already seeing water supplies at crisis point in a number of places. This is a bad way to consume a significant amount of water, especially as it is unnecessary.	3.18
75	Water consumption	We recommend that the intensity of mining on Newnes Plateau be reduced so that water production (water make) from the mines located under the Plateau is limited to existing levels (this was done for Clarence Colliery without loss of jobs. The alternative will be a death sentence for Newnes Plateau with all nationally endangered swamps, streams and slot canyons dry due to this increased unsustainable water pumping rates from coal mines)	3.18
127	Water demand	Included in those factors are the availability of water usage for this extension and given the current and future drought prospects would impinge on the water supply for future community needs. In the case of using mine discharge water is to be further investigated given the current quantity of extraction of groundwater in the Lithgow region could impact on the substructure and could prove damaging to surface structures and facilities. The current fly ash repository borders on the current Lamberts Gully open cut mine and concerns of the base structure of this repository is also to be carefully monitored due to the current number of over 180 blasts from this open cut mine. This could prove detrimental to the fragile sandstone substructure and leakage from this repository to groundwater.	3.18
132	Water demand	The claim that there is already sufficient water available from this system (Coxes River) is incorrect especially in the light of the critical shortfall 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. 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' system.	3.18
138	Water pollution	Delta Energy is already seriously polluting the Cox's River and has been taken to court over the issue	3.18
144	Water pollution	The EA claims that this extension will be 'zero discharge'. We look at our creeks every day in disgust, and know this is a lie. So do the SCA and EPA. In 2007 Delta recorded a License non-compliance for discharges into Nuebecks Ck, also in 2003/4 when stormwater breached a	3.18

Submission number	Issue	Submission details	Response
		bund wall and flyash flooded Nuebecks Ck, We local residents have of course regularly seen Nuebecks Creek suddenly flowing grey mud, despite no rain. So we started measuring. I have been involved in the SCA Streamwatch water monitoring program for over 3 - regularly testing water quality in waterways throughout the Lithgow area. I can attest that water quality in the 4 creeks flowing from Mt Piper Power Station (Wangcol Ck, un-named creek 160m east, Lamberts Gully Ck, Nuebecks Ck) have consistently returned some of the worst water quality figures of all 35 waterways being tested. And this water is not safe. Birch et al (2001) in the publication 'The source of anthropogenic heavy metals in fluvial sediments of a rural catchment: Cox's River' recorded the highest Chromium levels in the Coxs R catchment on the bank of Neubecks Ck. They also recorded high levels of Cobalt and Nickel in sediments, and high concentrations of Cadmium, Cobalt, Nickel and Zinc downstream of Mount Piper Power Station. The SOEE for the Modification of Mt Piper Ash & Brine Disposal Area (MOD-n-9-2007-i) listed the constituents of the 15 ML of Brine produce annually - high levels of arsenic, beryllium, boron, cadmium, chromium/ fluoride/ iron, lead/ manganese, nickel, selenium/ 5ulphates and zinc. On page 13 it said that since 1999 the Salinity levels in Mt Piper's Brine increased by 17%, Sulphates by 34%, Boron by 55%, and Fluoride by a staggering 126 times – from 21mg/L in 1999 to 126mg/L in 2006. What will it be like in 50 years? Surely the residents of Blackmans Flay have some rights to clean and safe water in local creeks? Offsite discharges from power stations and the coal mines which supply them have indisputably and irreparably damaged and polluted surface and ground water supplies in the Coxs River catchment with excessive salts and metals. The most easily measured proof of this is Electrical Conductivity or Salinity. At its birth in Ben Bullen State Forest the Coxs River has a salinity level of 30 ?S/cm. So too do the headwaters of other local creeks like Farmers Ck, State Mine Ck, Marrangaroo Ck, Carne Ck, Bungleboori Ck, and Wolgan River. But within 15 km of its birth the salinity levels in the Coxs R have reached 1200 µS/cm at Lake Wallace, and 2500 µS/cm below Lake Wallace because of discharges from Wallerawang Power Station's No.8 Blowdown drain. Meanwhile - - Invincible Colliery has a licence to discharge 4ML/day into the Coxs R with a salinity ranging from 1600 - 17S0 µS/cm during 2007; - Angus Place Colliery (hydraulically connected to Springvale Colliery) salinity discharges average 1100 µS/cm; - Springvale Colliery salinity discharges average 1100 µS/cm, formally into the Wolgan R, now into the Coxs R; - Baal Bone Colliery salinity discharges into Jews Creek average> 1000 µS/cm; - Lambert's Gully Mine salinity discharges into Nuebecks Creek average 1200 µS/cm; - Pine Dale Mine dumps its saline mine water into old underground mine workings; - Clarence Colliery dumps mine water with high levels of Ni, Zn, Co and Mn into the Wollangambe R, Wollemi National Park and Greater Blue Mountains World Heritage Area (GBMWHA); - The old Canyon Colliery is leaching high levels of Zn and Ni into the Grose River and GBMWHA; -Mt Piper Power Station generates 15 ML/year of brine with a salinity of 115,000 µS/cm - three times saltier than seawater off Sydney beaches, which must be disposed of in a freshwater catchment; - Wallerawang Power Station discharges high volumes of cooling tower blowdown water with a salinity >2000EC into the Coxs River below Lake Wallace; - Kerosene Vale Fly-ash Dam discharges water averaging 1000 µS/cm into Sawyers Swamp Ck; - Both Mt Piper and Kerosene Vale Fly-ash Dumps are unlined and known to be contaminating groundwater aquifers with high levels of	

Submission number	Issue	Submission details	Response
		Boron, Fluoride and more. Dubious NSW Planning laws do not take cumulative groundwater or surface water impacts into account before approving new developments, or Extending and Modifying existing developments. 15 Major Projects have been approved in the upper Coxs River catchment in the last 5 years (list of projects provided in submission). NSW Planning continues to assume that natural flows and rainfall will dilute any quantity of salts and metals that are dumped into the upper Coxs River. And this despite 12 years of drought, that climate change is predicted to see rainfall reduced by 20% in Southern Australia over the 50 year life of this project, despite the fact more and more long-wall mining continues to crack and pollute groundwater aquifers and disrupt natural river flows. It is highly misleading, dishonest and corrupt for the EA to claim that an almost doubling of coal-fired generation capacity in the upper Coxs River catchment from the current 2400 MW (Wallerawang 1000 MW, Mt Piper 1400 MW to 4400 MW, plus the associated doubling of ash and brine waste produced, and the coal mined to supply this proposal, will have 'minimal impact' on surface and ground water quality.	
135	Water pollution	This high salt content in the Coxs River is a direct result of water pollution from Wallerawang Power Station, Kerosene Vale Fly-ash Dam, and coal mines supplying the existing power stations. Salinity and heavy metal levels in the Coxs River are certain to increase in future due to cumulative impacts from the huge expansion in coal mining approvals in recent years, and because Springvale Colliery mine water which is 30 - 40 times more saline (average 1100 jJS/cm) than the Coxs River headwaters (average 30 jJ5/cm) is now flowing into the Coxs River. Clean water from the Fish River to dilute these salts and metals is clearly not reliable. Oberon Dam is at 12% and falling, and water levels may never recover. Meanwhile coal mining continues to undermine and pollute groundwater aquifers feeding the Coxs River, so less water of a much lower quality will be available for the life of this project. Furthermore global warming is predicted to result in 20% less rainfall in Southern Australia over the 50+ year life of this project, meaning less water to supply this project and to dilute pollution. Yet the EA for this proposal fails to acknowledge any of the above. The entire proposal appears to be based on: • Projections of current emissions based on current operating regimes at Mt Piper; • Known limited water supplies from the existing Coxs and Fish River water supplies; • Unknown unproven mine water supplies from Springvale and Clarence Colliery's; • Unknown quantities and unproven reliability of mine water supplies, the groundwater aquifers which feed them, and the groundwater aquifer recharge rates. • 'Assumed! figures rather than actual measurements. SURFACE WATER POLLUTION Since September 2006 Lithgow Environment Group volunteers have undertaken a comprehensive Streamwatch water quality monitoring program at some 35 sites in the local areas. The Sydney Catchment Authority (SCA)4 and an independent University of Western Sydney researcher have undertaken additional testing to verify these results. There was good agreement between these tests and the results obtained by volunteers. This has given our group a thorough understanding of the current state of water quality in the upper Coxs River catchment, the likely sources of pollutants, and the main issues of concern. Some alarming water quality issues have been identified in various waterways, including:	3.18

Submission number	Issue	Submission details	Response
		• Salinity levels 80 times higher than natural background levels; • Phosphate levels 500 times higher than natural background levels; • pH levels 1000 times higher than natural background levels; • Turbidity levels 400 times higher than natural background levels; • Water Temperature in industrial discharges 15° C higher than background levels • Dissolved Oxygen levels as low as 5%, which is lethal for aquatic life. Of particular concern is the EA claim that a Mt Piper extension will be "zero discharge". In 2007 Delta recorded a POEO Licence non-compliance for discharges into Nuebecks Ck. In 2003/04 non-compliances were recorded when stormwater breached a bund wall causing f1yash to escape. LEG members have personally seen many similar unrecorded incidents since 2003. Water quality results obtained over 3 years for 4 creeks flowing from land occupied by Mt Piper (Wangcol Ck, un-named creek 160m east, Lamberts Gully Ck, Nuebecks Ck) have consistently returned some of the worst water quality data for water quality of all of the 35 sites being tested. Wangcol Creek immediately outside the Mt Piper Power Station boundary fence has recorded salinity levels so high they exceeded the limit of our testing equipment. Photos below of the culvert under the Castlereagh Highway at this site show that the water quality has been so poor for so long that the concrete supports have actually corroded at the waterline. Turbidity levels exceeded ANZECC Water Quality Guidelines on 27 of the 33 occasions tested. The un-named creek 160m east of the above also flows from land occupied by Mount Piper Power Station. It exceeded the SCA Water Quality Monitoring Program Trigger Value of 300 EC for Electrical Conductivity on all 27 occasions tested, ranging from 860 to 1680 µS/cm. Lamberts Gully Creek which drains land adjacent the Mt Piper fly-ash repository exceeded the SCA Trigger Value for Electrical Conductivity on all 39 occasions tested, ranging from 870 to 1520 µS/cm. Rust on the creek bed and an oil slick on the water surface are the norm. In May 2007 the SCA recorded Manganese and Iron exceedances in this creek. Nuebecks Creek into which Mt Piper Power Station has a discharge licence is in similarly poor condition. The SCA recorded Nickel and Manganese exceedances in May 2007. Birch et al recorded the highest Chromium concentrations in the catchment on the bank of Neubecks Creek, and high levels of Cobalt and Nickel in sediments. They also recorded high concentrations of Cadmium, Cobalt, Nickel and Zinc downstream of Mount Piper. The water quality impacts from Wallerawang Power Station are also highly relevant to this proposal, as the pollutants flow into Lake Lyell, from which Mt Piper draws its cooling water. The blowdown from Cooling Tower No.8 of Wallerawang Power Station discharges large quantities of salts and heavy metals into the Coxs River downstream of Lake Wallace.· This has been demonstrated by water tests undertaken by the LEG Streamwatch Program since 2006s, the SCA in May 2007, and independent tests. The main issues appear to be high levels of Salinity, Turbidity Arsenic, Copper, Nickel, Boron, and Fluoride exceeding ANZECC guidelines". Kerosene Vale Ash Repository (KVAR) has a highly detrimental impact on the physical, chemical and biological condition of Sawyers Swamp Creek and the Cox's River, This has been demonstrated by water testing undertaken by the LEG Streamwatch, the SCA, Parsons Brinckerhoff and Ecology Labs for the Extension of the KVAR (MP07_0005). Hyder and ERM identified similar problems in 2002, as did Birch et al in 1999'. The main issues are Salinity, Cadmium, Nickel, Cobalt, Boron, Fluoride, Aluminium, and Zinc in excess of ANZECC guidelines. This is further supported by other sources including the EPA Licence Register", NSW Environmental Defenders Office", Aargus P/L,	

Submission number	Issue	Submission details	Response
		CSIR0, Harris and Hillman'·, O'Connor and Chessman, and Jasonsmith el al 2008. Many of the above references clearly identify that Wallerawang and Mount Piper Power Stations, and the coal mines which supply them with fuel, are the major sources of these pollutants. These references provide a huge body of evidence proving that dangerously high water pollution in the upper Coxs River from power generation and coal mining is already totally unsustainable. It is an offence under section 120 of the *Protection of Environment Operations Act* 1997 (POEO Act) to pollute waters. It is therefore highly misleading for the EA to claim that almost doubling coal-fired generation capacity in the upper Coxs R catchment from the current 2320 MW (Wallerawang 1000 MW. Mt Piper 1320 MW) to 4320 MW. plus the associated doubling of ash and brine waste produced and coal mined to supply this 2000 MW proposal will have *"minimal impact"* on water quality. GROUNDWATER POLLUTION For the same reasons as the above, LEG contends that dangerously high levels of salinity, trace elements and heavy metals will continue to leach from the unlined Mt Piper fly-ash Repository and Kerosene Vale Ash Repository (KVAR) into local groundwater aquifers. Parsons Brinckerhoff 7 in their Groundwater Assessment for the KVAR Stage 2 (MP 07_0005) identified from the DNR Bore Registry that there are 89 bores within a 10 kilometre radius of that site, and that most are registered for private/domestic use (stock or irrigation bores). Yet the EA for this proposal just 5 km away identified only 3 non-domestic bores? The SOEE for the extension of Mt Piper Ash and Brine Disposal (DA MOD-77-9-2007-i) identified that since 1999 the Salinity in Mt Piper's Brine increased by 17%, Sulphates by 34%, Boron by 55%, and Fluoride by 126 times. High levels of Fluoride, Boron and other heavy metals were recorded in groundwater boreholes adjacent Mt Piper fly-ash repository, and in Nuebecks Ck. Yet the EA for this proposal claims that almost doubling ash and brine waste produced will have no impact on groundwater or Nuebecks Creek, and the project will be "zero discharge"? The Reverse Osmosis and demineralization plants associated with this proposal will generate large and unspecified quantities of brine concentrates (currently 16 ML/year) with a salinity 3 times saltier than seawater, for disposal in an inland area. Groundwater contamination from these ash and brine dumps has the potential to contaminate groundwater aquifers feeding the Coxs River, the drinking water supply for 4 million Sydney water consumers, and numerous local bores used for domestic use or stock watering.	
132	Water supply	Mt Piper PS is located in the already stressed Murray-Darling water catchment, reliant on rainfall that is being already affected by climate change. Food security and irrigation water for agriculture is of far more importance than expanding centralised power facilities.	3.18
75	Water supply	The project description and preliminary environmental assessment states that Mt Piper Power Station Extension would not involve taking additional water from the existing Coxs River Water Supply Scheme or the Fish River Scheme. The relatively small quantity of water required for power station operations, the assessment claims, can be obtained from nearby mine workings (ie Springvale Colliery). Delta's annual water extraction Licence from the Coxs River, currently is 23,000ML/year (Sydney Catchment Audit, 2007). This makes it the largest water used in the Sydney Basin. Delta Electricity also takes a further 8,000 ML/year from the Fish River and Murray Darling Catchment. Up to another 12,775ML/year of water effluent are being extracted (mined) at unsustainable rates from groundwater and surface waters of the Newnes Plateau for these power plants. These latter extractions could one day kill the Nationally Endangered Upland shrub swamps on Newnes Plateau. So here is a critical issue for the approval of a coal fired expansion of the power station proposal – the sustainability of its water supply. The environmental assessment for he proposed power plant, however, is evasive on the point of water resources. The assessment does not quote the water use data given here. The colong Foundation rejects the claim that the amount of water needed for the proposed plant	3.18

Submission number	Issue	Submission details	Response
		expansion will be relatively small. The following evidence suggests that the amount of cooling water needed for the expanded power plant if very large indeed. The every growing extent of Delta Electricity's water interests is revealed by its 2008 Annual Report which on page 8 states that "To ensure production can be maintained as required at our two Western Region power stations, a reverse osmosis plant which treats water to reduce salinity was installed temporarily at Wallerawang power station. A reverse osmosis plant built to treat water at Mt Piper will be augment to lift production from 2.4 million litres a day to up to 6 million litres daily. This will enable more effective management of water supply and salinity in the Western Region. Delta has provided Lithgow Council with plans and studies that assessed increasing pump transfer of water from the Clarence coal mine to the Coxs River. Lithgow Council plans to secure funding to proceed with the scheme. Delta may be able to source some additional water once the transfer scheme is augmented. Delta has investigated the feasibility of sourcing additional water supplies from other abandoned mines. Further treatment options have been assessed to reduce the salinity of the mine water being transferred from the Springvale mine. In other words, Clarence, Springvale and possibly other abandoned mines are to transfer water to Delta's power plants. In addition, Angus Place Colliery is now hydraulically connected to the Springvale mine, the transfers involve that mine as well. On salinity of mine effluent, the power plant's environmental assessment contradicts Delta Electricity's 2008 Annual Report and makes no mention of the need for desalination plants. The September 20098 environmental assessment for the Mt Piper power plant extension, reports that discharging mine water from workings in the Mount Piper area tends to be low in salinity because of it accessibility to infiltrating rainwater, but acid in places (page 5-2, chapter 5). So in SKM's analysis, rainfall flows downwards into nearby mines and it is this rainwater that is being used in Delta's transfer operations for its power plants. The truth is probably to be found somewhere between to the two views of Delta and SKM. Australia may be one of the driest continents on earth, but Newnes Plateau has some very wet coal mines and from the following analysis reveals. Conservation groups consider that intensive coal mining damages the hydrological integrity of water catchments, and Newnes Plateau appears to be an extreme case. SKM reports that following long wall mining o r pillar extraction the rock mass above the close to the workings may increase in permeability and storage capacity by 3 orders of magnitude or more. So if SKM is right, rainwater falling on intensively mined areas is not flowing downs streams into the World Heritage Area or to Sydney's water supply but instead is being increasingly transferred to the Mt Piper power plant. The Springvale mine under Newnes Plateau is currently said to pump around 15 ML of effluent a day. The Angus Place Colliery to the north of the Springvale mine discharges a further 6.7 ML a day of effluent. To the south , the Clarence colliery on Newnes Plateau is reported as pumping around 14 ML of effluent a day but that discharge rate increases to 18 ML or more in wet weather. The additional water source for the expanded Mt Piper Power Plant would not only come from the Springvale Colliery (page 10, Preliminary project description and environmental assessment) but, according to Delta's 2008 Annual Report, also from the Clarence Colliery. It is also perhaps the intention of the Centennial Coal to mine in a manner that maximises water make for Delta's benefit, if Delta is paying for the water it receives from the mines. These collieries on Newnes Plateau are now not only mining coal but also the surface water and groundwater resources of the Plateau to support Delta's power plants. If they are being paid to do so, then the manner of these contractual arrangements should be more closely examined. Collectively these three mines currently are pumping over 35 ML of water a day from under Newnes Plateau. This equates to 12,775ML of	

Submission number	Issue	Submission details	Response
		water a year being transferred from Newnes Plateau. The consultants for the proposed Mt Piper power plant extension, SKM have reported a connection between surface waters and the water pumped from underground coal mines in the Western Coalfield. Springvale colliery is currently installing pipes of 600mm diameter across Newnes Plateau from bore six for its water transfer scheme to Delta Electricity's power plants. Duplicating the much smaller pipeline installed in 2005. In relation to the Springvale colliery, mining expert, Dr Hua Guo, has predicted that this mine would need a water pumping capacity of up to 25 ML per day by 2015. The reality of the larger popes and Dr Huya Guo's statement, plus the new proposed transfer from Clarence Colliery, as well as the desalination of transfer water, draws SKM's claim regarding no need for extra water in the environmental assessment into serious question. Also, the transfer water from Springvale goes to Sawyers Swamp Creek, and thence into Lake Lyell, and not into the Wallerawang power plant as previously. Direct use of this saline water in the Wallerawang plant burnt out its condensers, which cost the electricity rate payers of NSW millions of dollars. It is this problem that has triggered the need for a desalination plant. If the aspect of SKM analysis that coal mines collect rainwater is correct, then the Emirates' Wolgan Valley Resort also has to worry about the loss of its pristine water supply (they will also lose their rural gateway if a proposed open cut coal mine at Angus Place is approved. Patrons paying $1900 don't like to be covered in dust or seeing moonscapes at the start of their eco-holiday, but that's another issue Unless the water resources of Newnes Plateau are protected, the transfer of ground and surface waters reported by SKM is likely to cause the nationally endangered upland swamps of Newnes Plateau to dry out and die. Stream flows of the Carne Creek, the water supply of the Emirates Wolgan Valley Resort, also needs protection.	

Appendix B EPBC Referral Correspondence

Australian Government

Department of the Environment, Water, Heritage and the Arts

Notification of REFERRAL DECISION – not controlled action

Extension of Mount Piper Power Station, Mount Piper, NSW (EPBC 2009/5049)

This decision is made under Section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Proposed action

person named in the referral	Delta Electricity
proposed action	The proposed action involves extending the Mt Piper Power Station (to increase its generating capacity by up to 2,000 mega watts) near Lithgow, NSW, as detailed in the referral documentation received on 24 August 2009 and the additional information received on 21 September 2009.

Referral decision: Not a controlled action

status of proposed action	The proposed action is not a controlled action.

Person authorised to make decision

Name and position	Michelle Wicks Acting Assistant Secretary Environment Assessment Branch
signature	mwicks
date of decision	2/10/2009