

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I, the Minister for Planning, approve the project referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.


for The Hon Tony Kelly MLC
Minister for Planning

Sydney

21 DEC 2010

2010

File No: S07/01422

SCHEDULE 1

Application No:	07_0124
Proponent:	TRUenergy Tallawarra Pty Ltd
Approval Authority:	Minister for Planning
Land:	Lot 109, DP 1050302, Yallah Bay Road, Yallah, Wollongong local government area.
Project:	Construction and operation of a gas-fired power station and associated infrastructure, known as the Tallawarra Stage B Gas Turbine Power Station Project.
Major Project:	The project was declared a Major Project under section 75B(1)(a) of the <i>Environmental Planning and Assessment Act 1979</i> , because it is development of a kind described in clause 24 of Schedule 1 of <i>State Environmental Planning Policy (Major Development) 2005</i> .
Critical Infrastructure:	The project is classified as critical infrastructure within the meaning of section 75C of the <i>Environmental Planning and Assessment Act 1979</i> , as it meets the definition of development for the purposes of a facility for the generation of electricity that has a capacity to generate at least 250 megawatts and is the subject of an application lodged pursuant to Section 75E or 75M of the Act prior to 1 January 2013, pursuant to the Minister's critical infrastructure declaration dated 26 February 2008.

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SCHEDULE 2

Act, the	<i>Environmental Planning and Assessment Act, 1979</i>
CASA	Civil Aviation Safety Authority
Conditions of Approval	The Minister's conditions of approval for the project.
Construction	All pre-operation activities associated with the project other than survey, acquisitions, fencing, investigative drilling and excavation, building/road dilapidation surveys or other activities determined by the Environmental Representative to have minimal environmental impact such as minor access roads, adjustments to services/utilities, establishing temporary construction sites (in accordance with the requirements of this approval) or clearing (except where threatened species, populations or ecological communities would be affected).
DECCW	NSW Department of Environment, Climate Change and Water
Department, the	Department of Planning
Director-General, the	Director-General of the Department of Planning (or delegate).
Director-General's Approval	A written approval from the Director-General (or delegate).
Dust	Any solid material that may become suspended in air or deposited.
Minister, the	Minister for Planning
Operation	When the power station commences contributing electricity to the grid but excluding commissioning activities.
Probable Maximum Flood	The largest flood that could conceivably occur at a particular location. At the project site, this equates to a relative level of 3.24 metres Australian Height Datum.
Proponent	TRUenergy Tallawarra Pty Ltd
Publicly Available	Available for inspection by a member of the general public (for example available on an internet site or at a display centre).
Reasonable/feasible	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account mitigation benefits, cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
RTA	NSW Roads and Traffic Authority
Site	Land to which Major Projects Application 07_0124 applies, as shown in Figure 1-2 of the <i>Tallawarra Stage B Gas Turbine Power Station, Environmental Assessment</i> prepared by Sinclair Knight Merz and dated July 2009.
Shut-down period	The period during which a turbine is being taken out of service from normal operation to inactivity.
Start-up period	The period during which a turbine is being brought up to normal operation following a period of inactivity.
Tallawarra Lands	The land within the Tallawarra Land Border, excluding land within the power station site boundary, as shown in Figure 1-2 of the <i>Tallawarra Stage B Gas Turbine Power Station, Environmental Assessment</i> prepared by Sinclair Knight Merz and dated July 2009.

1. ADMINISTRATIVE CONDITIONS

Terms of Approval

- 1.1 The Proponent shall carry out the project generally in accordance with:
- Major Projects Application 07_0124;
 - Tallawarra Stage B Gas Turbine Power Station Project, Environmental Assessment*, prepared by Sinclair Knight Merz and dated July 2009;
 - Tallawarra Stage B Gas Turbine Power Submissions Report*, prepared by Sinclair Knight Merz and dated March 2010;
 - Supplementary Submissions Report for the Tallawarra Stage B Gas Turbine Power, prepared by Sinclair Knight Merz comprising the following documents:
 - Letter dated 5th July, 2010 from TRUenergy to the Department of Planning, *Submissions Report – Air Safety for Proposed Tallawarra Stage B Power Station, Yallah;*
 - Letter dated 5th July, 2010 from Ambidji to TRUenergy, *Proposed Tallawarra Stage B Gas Fired Peaking Power Station – CASA Assessment of the OCGT and CCGT Applications;*
 - Aeronautical Impact Assessment Tallawarra B Gas Peaking Power Station Wollongong, NSW. Closed Cycle Gas Turbine Plume Investigation*, prepared by the Ambidji Group and dated 29th March, 2010;
 - Aeronautical Impact Assessment Tallawarra B Gas Peaking Power Station Wollongong, NSW. Open Cycle Gas Turbine Revised Plume Investigation*, prepared by the Ambidji Group and dated 24th March, 2010; and
 - the conditions of this approval.
- 1.2 In the event of an inconsistency between:
- the conditions of this approval and any document listed from condition 1.1a) to 1.1d) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and
 - any document listed from condition 1.1a) to 1.1d) inclusive, the most recent document shall prevail to the extent of the inconsistency.
- 1.3 The Proponent shall comply with any reasonable requirement(s) of the Director-General arising from the Department's assessment of:
- any reports, plans or correspondence that are submitted in accordance with this approval; and
 - the implementation of any actions or measures contained in these reports, plans or correspondence where appropriate.

Limits of Approval

- 1.4 This project approval shall lapse five years after the date on which it is granted, unless the works that are the subject of this approval are physically commenced on or before that time.
- 1.5 The project shall comprise either a two- or three-unit gas turbine power plant with a total nominal output of up to 450 megawatts operating in open cycle mode or a single unit gas turbine plant with a nominal output of 400 megawatts operating in combined cycle mode.
- 1.6 Nothing in this approval permits the construction and operation of an open cycle gas turbine plant, unless the Proponent has submitted a report to the Director-General which demonstrates that operation of an open cycle gas turbine plant will not have an adverse impact on aviation safety. This report must be prepared in consultation with Shellharbour City Council, and its conclusions and recommendations must have been agreed to by the Civil Aviation Safety Authority prior to submission to the Director-General. The report must be approved by the Director-General before commencement of construction of an open cycle plant.

Statutory Requirements

- 1.7 The Proponent shall ensure that all licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent shall ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the life of the project.
- 1.8 For the purpose of section 75S(2)(b) of the Act, the *relevant provisions*, as defined in section 75S(1A) of the Act, apply to this approval.

2. OPERATING CONDITIONS

Approved Fuels

- 2.1 Natural gas is the only fuel approved for firing of the burner/turbine in the event that a combined cycle power station is constructed.
- 2.2 Natural gas is the primary fuel approved for firing of the burners/turbines in the event that an open cycle power station is constructed. Diesel fuel shall only be used to manage fuel capacity in the event of insufficient or failure of natural gas supplies and either: cessation of operation would lead to a loss or reduction in electricity necessary to maintain the required network supply security/reliability; or the Australian Energy Market Operator (AEMO), or a person authorised by AEMO, directs the Proponent (as a licensee) under the National Electricity Rules to provide, maintain, increase or be available to increase power generation for system security/reliability.
- 2.3 Diesel fuel used at the power station shall have a maximum sulphur content of 50 parts per million by weight.

Mode of Operation

- 2.4 The Tallawarra Stage B combined cycle gas turbine power station shall not operate in cold start cycle at the same time as the Tallawarra Stage A combined cycle gas turbine power station, unless otherwise agreed to by the DECCW and approved by the Director-General. A cold start is defined as the first 120 minutes following of power station operation after a period of more than 36 hours shut down.

Approved Chemicals

- 2.5 Only biocides and antifouling chemicals assessed in the documents referred to in conditions 1.1b) and 1.1c), or otherwise approved by the DECCW, and permitted, registered or approved for use by the Australian Pesticides and Veterinary Medicines Association, shall be used in the operation of the power station.

3. SPECIFIC ENVIRONMENTAL CONDITIONS

Noise Impacts

Construction Noise

- 3.1 The Proponent shall only undertake construction activities associated with the project that would generate an audible noise at any sensitive receivers during the following hours:
 - a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;
 - b) 8:00 am to 1:00 pm on Saturdays; and
 - c) at no time on Sundays or public holidays.

This condition does not apply in the event of a direction from police or other relevant authority for safety reasons, or to prevent environmental harm, the loss of property or risk to life.

- 3.2 The hours of construction activities specified under condition 3.1 of this approval may be varied with the prior written approval of the Director-General. Any request to alter the hours of construction specified under condition 3.1 shall be:

- a) considered on a case-by-case basis;
- b) accompanied by details of the nature and need for activities to be conducted during the varied construction hours; and
- c) accompanied by written evidence demonstrating consultation with the DECCW in relation to the proposed variation in construction times (including the consideration of any comments made by the DECCW).

3.3 The Proponent shall implement all reasonable and feasible mitigation measures with the aim of achieving the following construction noise and vibration goals:

- a) where audible at any sensitive receivers, the $L_{Aeq(15\text{minute})}$ noise level from construction activities should not exceed the rating background level by more than 10 dB; and
- b) the vibration limits set out in the *Assessing Vibration: A Technical Guideline* (Department of Environment and Climate Change, 2006) for human exposure.

3.4 During construction, the Proponent shall minimise noise emissions from plant and equipment, including bulldozers, cranes, graders, excavators and trucks, by installing and maintaining where reasonable and feasible, efficient silencers and low-noise mufflers (residential standard).

Operational Noise

3.5 The Proponent shall design, construct, operate and maintain the project to ensure that the total cumulative noise contribution from the combined operation of the Tallawarra Stage A and Tallawarra Stage B power stations to the background acoustic environment does not exceed the noise limits specified in Table 1 and Table 2.

Table 1 – Maximum Allowable Noise Limits Outside the Tallawarra Lands

Location	Day 7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	Evening 6:00 pm to 10:00 pm on any day	Night 10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays	
	$L_{Aeq(15\text{ minute})}$	$L_{Aeq(15\text{ minute})}$	$L_{Aeq(15\text{ minute})}$	L_{Amax}
Locality T2 Any residence on Carlyle Close, Wollin Place, Coronet Place, and Crompton Street, in Koonawarra	35 dB(A)	35 dB(A)	35 dB(A)	45 dB(A)
Locality T4 Any residence on Wyndarra Way and Malonga Place in Koonawarra	35 dB(A)	35 dB(A)	35 dB(A)	45 dB(A)
Locality ML#9 Any residence on The Boulevard, Park Crescent, Horsley Road and Newton Crescent in Oak Flats	38 dB(A)	38 dB(A)	38 dB(A)	45 dB(A)
Locality ML#10 Any residence on Reddall Parade and Henricks Parade in Mt Warrigal	38 dB(A)	38 dB(A)	38 dB(A)	45 dB(A)
Locality ML#11 Any residence in Haywards Bay	35 dB(A)	35 dB(A)	35 dB(A)	45 dB(A)

The localities set out in Table 1 are those described in Appendix E of the document listed in condition 1.1b). For the purpose of Table 1, "residence" is defined as any residential dwelling existing at the date of this approval and any residential dwelling, once constructed, on land zoned R2 - Low Density Residential under the *Wollongong Local Environmental Plan 2009* at the identified locality.

Table 2 - Noise Limits for Tallawarra Lands Residential Areas

Location	Day 7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	Evening 6:00 pm to 10:00 pm on any day	Night 10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays	
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Amax}
Most affected residence - proposed northern residential area	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 40 dB(A), otherwise 38 dB(A)	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 40 dB(A), otherwise 38 dB(A)	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 40 dB(A), otherwise 38 dB(A)	50 dB(A)
Most affected residence - proposed central residential area	40 dB(A)	40 dB(A)	40 dB(A)	50 dB(A)
Most affected residence - proposed south-western residential area	41 dB(A)	41 dB(A)	41 dB(A)	51 dB(A)

The proposed residential areas set out in Table 2 are those illustrated in Appendix A of the *Tallawarra Concept Plan Application – Preliminary Assessment Report* prepared by Don Fox Planning and dated June 2009. For the purpose of Table 2, "residence" is defined as any residential dwelling once constructed, either prior to or post the construction and operation of the power station, on land zoned R2 - Low Density Residential or R5 - Large Lot Residential under the *Wollongong Local Environmental Plan 2009* within the proposed residential areas.

If noise from an activity is substantially tonal, intermittent or impulsive in nature or contains major components within the low frequency range (as described in Chapter 4 of the *NSW Industrial Noise Policy* (Environment Protection Authority, 2000)), 5 dB(A) must be added to the measured noise level when comparing the measured noise with the limits specified in Tables 1 and 2, in accordance with the requirements of the *Industrial Noise Policy*.

The noise limits set out in Table 1 and Table 2 do not apply under: wind speeds greater than 3 metres per second (measured at 10 metres above ground level); or under stability category G temperature inversion conditions; or under stability category F temperature inversion conditions and wind speeds greater than 2 metres per second at 10 metres above the ground.

Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part 4E of Appendix E of the *NSW Industrial Noise Policy* (Environment Protection Authority, 2000).

The data to be used for determining meteorological conditions is that recorded by the meteorological weather station located at the Tallawarra Stage A power station.

- 3.6 Where operational noise monitoring (as required by either conditions 4.1 or 4.5 of this approval) identifies any non-compliance with the operational noise limits specified under condition 3.5 of this approval, the Proponent shall prepare and submit to the Director-General for approval a report including, but not limited to:
- an assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source;
 - identification of the preferred measure(s) for reducing noise at the source;
 - evidence that the DECCW is satisfied that the proposed noise mitigation measures are acceptable; and
 - location, type, timing and responsibility for implementation of the noise mitigation measure(s).

The report is to be submitted to the Director-General within 90 days of undertaking the noise monitoring which has identified exceedances of the operational noise criteria specified under condition 3.5, unless otherwise agreed to by the Director-General. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Director-General.

Additional Noise Mitigation Measures

- 3.7 If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 3.6, the noise generated by the combined operation of the Tallawarra Stage A and Tallawarra Stage B power stations exceeds the noise limits stipulated in Table 3 and Table 4 at the specified localities, upon receiving a written request from an affected landowner (unless that landowner has acquisition rights under condition 3.13 of this approval and has requested acquisition) the Proponent shall investigate and implement reasonable and feasible at-receiver noise mitigation measures such as double glazing, insulation, air conditioning and or other building acoustic treatments at any residence on the land, in consultation with the landowner, to ensure that the noise limits specified in condition 3.5 of this approval are not exceeded.

Table 3 – Additional Noise Mitigation Criteria Outside the Tallawarra Lands

Location	Day 7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	Evening 6:00 pm to 10:00 pm on any day	Night 10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)
Locality T2 Any residence on Carlyle Close, Wollin Place, Coronet Place, and Crompton Street, Koonawarra	40 dB(A)	40 dB(A)	40 dB(A)
Locality T4 Any residence on Wyndarra Way and Malonga Place in Koonawarra	41 dB(A)	41 dB(A)	41 dB(A)
Locality ML#9 Any residence on The Boulevard, Park Crescent, Horsley Road and Newton Crescent in Oak Flats	41 dB(A)	41 dB(A)	41 dB(A)
Locality ML#10 Any residence on Reddall Parade and Henricks Parade in Mt Warrigal	40 dB(A)	40 dB(A)	40 dB(A)
Locality ML#11 Any residence in Haywards Bay	47 dB(A)	47 dB(A)	47 dB(A)

Table 4 - Additional Noise Mitigation Criteria for Tallawarra Lands Residential Areas

Location	Day 7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	Evening 6:00 pm to 10:00 pm on any day	Night 10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)
Most affected residence - proposed northern residential area	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 43 dB(A), otherwise 41 dB(A)	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 43 dB(A), otherwise 41 dB(A)	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 43 dB(A), otherwise 41 dB(A)
Most affected residence - proposed central residential area	43 dB(A)	43 dB(A)	43 dB(A)
Most affected residence - proposed south-western residential area	44 dB(A)	44 dB(A)	44 dB(A)

If noise from an activity is substantially tonal, intermittent or impulsive in nature or contains major components within the low frequency range (as described in Chapter 4 of the *NSW Industrial Noise Policy* (Environment Protection Authority, 2000)), 5 dB(A) must be added to

the measured noise level when comparing the measured noise with the limits specified in Tables 3 and 4, in accordance with the requirements of the *Industrial Noise Policy*.

- 3.8 The Proponent shall bear the costs of any additional at-receiver mitigation measures implemented at an affected property or land.
- 3.9 The Proponent shall make a binding written offer to the landowner regarding the mitigation options that can be implemented at the property. If within three months of receiving this request from the landowner the Proponent and landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution, whose decision shall be final. If the landowner refuses to accept the Proponent's offer within six months of the date of offer, the Proponent's obligations to provide additional mitigation measures at the property or land shall cease, unless otherwise agreed by the Director-General.
- 3.10 If a landowner has agreed to, or a property has been the subject of the application of, at-source noise mitigation measures under condition 3.7, the Proponent's obligations to reconsider the land or property under the requirements of condition 3.7 shall cease, unless otherwise agreed by the Director-General.
- 3.11 The requirements of conditions 3.7 to 3.10 do not apply if a negotiated agreement consistent with the requirements of Section 8.3 of the *New South Wales Industrial Noise Policy* (Environment Protection Authority, 2000) exists between the Proponent and the landowner.
- 3.12 The Proponent shall provide written notice to all landowners that are entitled to rights under condition 3.7 within 21 days of determining the landholdings to which these rights apply. This condition only applies where operational noise levels have been confirmed. For the purpose of this condition and condition 3.18, confirmation of operational noise levels means:
- a) completion of the operational noise review required under condition 4.1 of this approval; and
 - b) implementation of any source controls, as required under condition 3.6 of this approval, should the operational noise review indicate noise levels in excess of the operational noise limits specified in condition 3.5; and
 - c) monitoring of operational noise levels, as per the requirements under condition 4.5 of this approval, following the implementation of any source controls.

Land Acquisition Criteria

- 3.13 If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 3.6, the noise generated by the combined operation of the Tallawarra Stage A and Tallawarra Stage B power stations exceeds the noise limits specified in Table 5 and Table 6 at the specified localities, the Proponent shall, upon receiving a written request for acquisition from the landowner, within two years of the date of that landowner being notified of his/her acquisition rights, acquire the land in accordance with the procedures in conditions 3.14 to 3.16 of this approval.

Any landowner that has agreed to, or property that has been the subject of, the application of additional noise mitigation measures under condition 3.7 of this approval waives the right to land acquisition.

Table 5 - Land Acquisition Criteria for Residential Receivers Outside the Tallawarra Lands

Location	Day 7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	Evening 6:00 pm to 10:00 pm on any day	Night 10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)
Locality T2 Any residence on Carlyle Close, Wollin Place, Coronet Place, and Crompton Street, Koonawarra	43 dB(A)	43 dB(A)	43 dB(A)
Locality T4 Any residence on Wyndarra Way and Malonga Place in Koonawarra	44 dB(A)	44 dB(A)	44 dB(A)
Locality ML#9 Any residence on The Boulevard, Park Crescent, Horsley Road and Newton Crescent in Oak Flats	44 dB(A)	44 dB(A)	44 dB(A)
Locality ML#10 Any residence on Reddall Parade and Henricks Parade in Mt Warrigal	43 dB(A)	43 dB(A)	43 dB(A)
Locality ML#11 Any residence in Haywards Bay	50 dB(A)	50 dB(A)	50 dB(A)

Table 6 - Land Acquisition Criteria for Tallawarra Lands Residential Areas

Location	Day 7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	Evening 6:00 pm to 10:00 pm on any day	Night 10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)
Most affected residence - proposed northern residential area	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 46 dB(A), otherwise 44 dB(A)	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 46 dB(A), otherwise 44 dB(A)	If the <i>Industrial Noise Policy</i> (INP) Modification Factors for Low Frequency Noise apply – 46 dB(A), otherwise 44 dB(A)
Most affected residence - proposed central residential area	46 dB(A)	46 dB(A)	46 dB(A)
Most affected residence - proposed south-western residential area	47 dB(A)	47 dB(A)	47 dB(A)

If noise from an activity is substantially tonal, intermittent or impulsive in nature or contains major components within the low frequency range (as described in Chapter 4 of the *NSW Industrial Noise Policy* (Environment Protection Authority, 2000)), 5 dB(A) must be added to the measured noise level when comparing the measured noise with the limits specified in Tables 5 and 6, in accordance with the requirements of the *Industrial Noise Policy*.

3.14 Within three months of receiving a written request from a landowner with acquisition rights under condition 3.13 of this approval, the Proponent shall make a binding written offer to the landowner based on:

- (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project which is the subject of the project application, having regard to the -
 - i) existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request, and
 - ii) presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date;
- (b) the reasonable costs associated with -
 - i) relocating within the Wollongong or Shellharbour local government areas,

- ii) obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and
- (c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.

Within 14 days of receiving the independent valuer's determination, the Proponent shall make a written offer to purchase the land at a price not less than the independent valuer's determination.

If the landowner refuses to accept this offer within six months of the date of the Proponent's offer, the Proponent's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.

- 3.15 The Proponent shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Director-General and the costs of determination referred to above.
- 3.16 If a landowner has already agreed to an offer of acquisition under the requirements of condition 3.13, or an offer of acquisition has been made under the requirements of condition 3.13 and refused by the landowner, the Proponent's obligations to re-consider the landowner's request or property under the requirements of condition 3.13 shall cease, unless otherwise agreed by the Director-General.
- 3.17 The requirements of conditions 3.13 to 3.16 do not apply if a negotiated agreement consistent with the requirements of Section 8.3 of the *New South Wales Industrial Noise Policy* (Environment Protection Authority, 2000) exists between the Proponent and the relevant landowner.
- 3.18 The Proponent shall provide written notice to all landowners that are entitled to rights under condition 3.13 within 21 days of determining the landholdings to which land acquisition rights apply. This condition only applies where operational noise levels have been confirmed in accordance with the definition in condition 3.12.

Air Quality Impacts

Dust Generation

- 3.19 The Proponent shall construct and operate the project in a manner that minimises dust emissions from the site, including wind-blown and traffic-generated dust. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Proponent shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.

Odour

- 3.20 The Proponent shall not permit any offensive odour, as defined under section 129 of the *Protection of the Environment Operations Act 1997*, to be emitted beyond the boundary of the site.

Manufacturer's Performance Guarantee

- 3.21 Prior to the installation of any fuel burning equipment associated with the project, the Proponent shall submit the manufacturer's performance guarantee for that equipment to the

DECCW. The documentation shall demonstrate to the DECCW's satisfaction that the equipment, when operating at design load, will comply with the air discharge limits specified in this approval under condition 3.24.

Air Discharge Points

3.22 For the purpose of this approval, air discharge/monitoring points are identified in Table 7.

Table 7 - Identification of Air Monitoring and Air Discharge Points

Monitoring / Discharge Point Identifier	Description of Location
1	Stack Serving Open Cycle Plant Turbine 1
2	Stack Serving Open Cycle Plant Turbine 2
3	Stack Serving Open Cycle Plant Turbine 3
4	Stack Serving Combined Cycle Plant

3.23 The Proponent shall ensure that the design and construction of the project includes sampling positions that comply with TM-1 as set out in *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (Department of Environment and Conservation, 2007).

Discharge Limits

3.24 The Proponent shall design, construct, operate and maintain the project to ensure that for each turbine stack discharge point, the concentration of each pollutant listed in Table 8 is not exceeded. The condition only applies to the normal operation of a turbine and, to avoid any doubt, does not apply during the start-up and shut-down period for a turbine. The condition continues to apply to other turbines if they are operational during these periods.

Table 8 – Maximum Allowable Discharge Concentration Limits (Air)

Discharge Point Identifier	Pollutant	Fuel Type	100 percentile concentration limit (mgm ⁻³)	Averaging Period	Reference conditions
1, 2 and 3	nitrogen dioxide (NO ₂) or nitric oxide (NO), or both as NO ₂ equivalent	Natural Gas	51	1-hour	dry, 273 K, 101.3 kPa, and 15% oxygen (O ₂)
1, 2 and 3		Diesel	86		
4		Natural Gas	51		

Mass Limits

3.25 The Proponent shall design, construct, operate and maintain the project to ensure that the total cumulative load of nitrogen dioxide or nitric oxide, or both as nitrogen dioxide, from the combined discharges from the Tallawarra Stage A and Tallawarra Stage B power stations does not exceed 900 tonnes per annum. This mass limit also applies to emissions during start-up and shut-down periods. It also applies to natural gas operation and diesel fuel operation for an open cycle plant.

Aviation Safety

3.26 The stacks associated with the proposal must be marked and lit in accordance with the requirements of the Civil Aviation Safety Authority.

Hazards and Risk

Pre-Construction Hazards Studies

3.27 Prior to the commencement of construction of the project, other than site preparation works, or as otherwise agreed by the Director-General, the Proponent shall prepare the following studies:

- a) a **Fire Safety Study** for the project, covering relevant aspects detailed in the Department's publication *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall include a

strict maintenance schedule for essential services and other safety measures. The Study shall meet the requirements of the NSW Fire Brigades;

- b) a **Hazard and Operability Study (HAZOP)** for the project, chaired by an independent, qualified person or team. The Study shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines* and shall, in particular, address the early shut-down procedures and systems in the event of a gas leak and recommended measures for early shut-down in the event of an incident. The HAZOP report shall be accompanied by a program for the implementation of all recommendations made in the HAZOP report. If the Proponent intends to defer the implementation of a recommendation, justification must be included;
- c) a **Final Hazard Analysis** prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis*; and
- d) a **Construction Safety Study** for the project, prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*.

Pre-Commissioning Hazards Studies

3.28 Prior to the commencement of commissioning of the project, the Proponent shall prepare the following studies:

- a) a comprehensive **Emergency Plan** and detailed emergency procedures for the project. The Plan shall be prepared in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*; and
- b) a **Safety Management System**, covering all on-site operations and any associated transport activities involving hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be consistent with the Department's publication *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*.

Bunding and Spill Management

3.29 The Proponent shall store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with:

- a) all relevant Australian Standards;
- b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and
- c) the *Environment Protection Manual for Authorised Officers: Bunding and Spill Management*, technical bulletin (Environment Protection Authority, 1997).

In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency.

Water Quality and Soil Impacts

3.30 Except as may be provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* which prohibits the pollution of waters.

3.31 Soil and water management controls shall be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities, in accordance with Landcom's (2006) *Managing Urban Stormwater: Soils and Construction*.

3.32 In the event that a combined cycle plant is constructed, the Proponent shall design, construct, operate and maintain the plant so that the combined cooling water discharge from the Tallawarra Stage A and B plants into the outlet canal, downstream of the attemperation mixing zone, does not exceed 35 degrees Celsius.

- 3.33 In the event that a combined cycle plant is constructed, the Proponent shall ensure that the concentration of biocide in the cooling water discharge into the outlet canal, downstream of the attenuation mixing zone, does not exceed the limits set out in Table 9.

Table 9 - Biocide Concentration Limits in Cooling Water Discharge

Pollutant	100 Percentile Concentration Limit	Reference Conditions
Hydrex 2470	0.1 milligrams per litre	Five minutes after the start of the blowdown discharge from the cooling tower system.
Registered/permitted product containing paracetic acid	0.1 milligrams per litre	Five minutes after the start of the blowdown discharge from the cooling tower system.

Hydrology

- 3.34 The Proponent shall utilise existing crossings over Yallah Creek and shall avoid constructing temporary watercourse crossings for heavy vehicles and machinery.
- 3.35 The Proponent shall ensure that any construction activities within 40 metres of the bank of Yallah Creek, and any other watercourses, are consistent with *Controlled Activity Guidelines* (Department of Water and Energy, 2008) including, but not limited to, 'In-stream Works', 'Outlet Structures', 'Riparian Corridors', 'Vegetation Management Plans', and 'Watercourse Crossings', or any guidelines which supersede these documents.
- 3.36 The Proponent shall ensure that the project is designed, sited and constructed so that it is not subject to inundation by floodwaters up to or at a level of the Probable Maximum Flood, nor does it exacerbate flooding on adjacent land.

Where the Proponent can demonstrate to the satisfaction of the Director-General that it is not reasonable and feasible to design to the Probable Maximum Flood, the Proponent may nominate an alternative design flood level for the approval of the Director-General. The alternative flood level shall be developed using a risk-based approach and in consultation with Wollongong City Council.

- 3.37 The project shall be designed, and employ surface water management techniques, such that existing runoff volumes along drainage lines from the site are maintained at pre-construction levels and there are no adverse effects to adjoining land as a result of flooding and runoff.

Flora and Fauna Impact

- 3.38 The Proponent shall ensure that there is no disturbance to the endangered ecological communities, including the Illawarra Subtropical Rainforest in the Sydney Basin Bioregion and the Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions, during the construction and operation of the project.
- 3.39 The Proponent shall mark the areas of endangered ecological communities with flagging tape or similar prior to commencing construction to ensure that there is no incursion into, or clearing of the areas.
- 3.40 The Proponent shall ensure that clearing of native vegetation is limited to the minimal extent required for the construction of the project and shall undertake all reasonable and feasible measures to avoid the clearing of any threatened flora species. All cleared areas shall be stabilised with local native grasses and ground cover plants as soon as practicable to minimise soil erosion.
- 3.41 At least one month prior to the commencement of construction of the project, the Proponent shall develop a plan for offsetting the biodiversity impacts resulting from the removal of any native vegetation. The plan shall be submitted to the Director-General for approval and include as appropriate, but not necessarily be limited to:

- a) measures for encouraging the natural regeneration of locally native vegetation, including weed management measures as identified in condition 3.44;
- b) replanting/compensatory plantings (at a ratio of at least 2:1) and/or land offsets, and rehabilitation measures;
- c) measures for replacing specific habitat values impacted by the project (e.g. provision of roost/nest boxes where significant habitat trees such as hollow bearing trees are impacted);
- d) a timeline for the implementation of the identified measures, including ongoing monitoring and maintenance;
- e) demonstration of how the plan would achieve the outcome of maintaining or improving biodiversity values in the local area; and
- f) measures for monitoring and maintaining any offsets in perpetuity.

The plan shall be implemented in accordance with the specified measures and timeframes, unless otherwise agreed to by the Director-General.

3.42 The Proponent shall establish a riparian zone consisting of local native plant species adjacent to Yallah Creek within the power station site boundary. The width of the riparian zone is to be a minimum of 50 metres on both sides of the creek, where practicable. All works and disturbance areas associated with the construction and operation of the project must be located outside of the riparian zone, including new transmission line poles.

3.43 The Proponent shall monitor and maintain the riparian zone along Yallah Creek (referred to in condition 3.42) throughout the life of the project.

3.44 The Proponent shall monitor all rehabilitated areas, offset areas, and riparian zones for weed infestation. Any infestations shall be actively managed to remove or minimise their spread.

Lake Ecology

3.45 In the event a combined cycle plant is constructed, the extent of seagrass beds in the receiving waters of Lake Illawarra shall be mapped each summer using a combination of aerial images and field observations, and using the methodologies detailed in the document titled *Tallawarra Combined Cycle Gas Turbine Power Station Water Quality and Biological Community Management Plan* (May, 2008). Nothing in this approval restricts the Proponent from utilising the existing seagrass monitoring plan for the Tallawarra Stage A power station to satisfy the requirements of condition.

3.46 In the event a combined cycle plant is constructed, the Proponent shall manage operations to avoid the net loss of seagrass beds in the receiving waters of Lake Illawarra, excluding the outlet canal.

3.47 Should a net loss of seagrass beds occur, the Proponent shall prepare and submit to the Director-General a report detailing the percentage and physical area of loss, the reasons for the loss, and the proposed measures for minimising any further loss and offsetting the loss.

3.48 In the event a combined cycle plant is constructed, benthos shall be monitored each summer as detailed in the document titled *Tallawarra Combined Cycle Gas Turbine Power Station Water Quality and Biological Community Management Plan* (May, 2008). Nothing in this approval restricts the Proponent from utilising the existing benthos monitoring plan for the Tallawarra Stage A power station to satisfy the requirements of condition.

Visual Amenity Impacts

3.49 The Proponent shall undertake landscaping works to reduce the visual impact of the power station from residences along the foreshore, prior to the commencement of operation of the project. Vegetation used in landscaping works shall comprise local native species.

- 3.50 The Proponent shall minimise the use of reflective building elements and maximise the use of building materials and treatments which visually complement the surrounding landscape.
- 3.51 The Proponent shall ensure that the power station is consistent in design (including materials, finishes and colours) with the Tallawarra Stage A power station.
- 3.52 The Proponent shall ensure that all external lighting associated with the project is mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadway. The lighting shall be the minimum level of illumination necessary and shall comply with *Australian Standard AS4282 1997 – Control of the Obtrusive Effects of Outdoor Lighting*.
- 3.53 Where aviation hazard lighting is recommended by CASA and/or AirServices Australia, all reasonable and feasible attempts shall be made to ensure that this lighting is designed and directed so as not to create a nuisance to the surrounding environment, properties and roadway.

Aboriginal Heritage Impacts

- 3.54 The Proponent shall take all reasonable and feasible measures to avoid the sites known as Yallah Gully 1 (National Parks and Wildlife Services Site ID 52-5-0248), Yallah Gully 2 (National Parks and Wildlife Services Site ID 52-5-0247), Yallah Gully 3 (National Parks and Wildlife Services Site ID 52-5-0246) and Yallah Site 2 (National Parks and Wildlife Services Site ID 52-5-0122) during the construction of the project, and develop site-specific mitigation measures to ensure that they are not impacted by construction or operation of the power station and any associated infrastructure. If impacts are unavoidable, mitigation measures are to be negotiated with the Aboriginal community and the DECCW.
- 3.55 If during the course of construction or operation of the project the Proponent uncovers any previously unidentified Aboriginal cultural objects, all works likely to affect the object(s) shall cease in the immediate area to prevent any further impact to the find(s) and the DECCW informed. A suitably qualified archaeologist and Aboriginal community representatives shall be contacted to determine the significance of the find(s) and appropriate management measures. The Proponent shall register the site and management outcome in the Aboriginal Heritage Information Management System (AHIMS) in accordance with the *National Parks and Wildlife Act 1974*. Works are not to resume until approval in writing is received from the DECCW.
- 3.56 Where ground disturbance is proposed (for example excavation or removal of vegetation) in the vicinity of Yallah Creek, prior to commencing construction, the Proponent shall undertake further archaeological surveying and assessment with the aim of identifying any Aboriginal cultural heritage values which may be impacted by the project. The Proponent shall ensure monitoring by Local Aboriginal Land Council representatives during such works.

Traffic and Transport Impacts

- 3.57 Upon determining the haulage route(s) for construction vehicles associated with the project, the Proponent shall commission an independent, qualified person or team to undertake a **Road Dilapidation Report** for Yallah Bay Road. The report shall assess the current condition of the road and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the project. The Report shall be submitted to the relevant road authority for review prior to the commencement of haulage.

The Proponent shall ensure that any measures to restore or reinstate roads affected by the project are undertaken in a timely manner, in accordance with the requirements of and to the satisfaction of the relevant road authority, and at the full expense of the Proponent. In the event of a dispute between the parties with respect to the extent of restorative work that may be required under this condition, any party may refer the matter to the Director-General for

resolution. The Director-General's determination of any such dispute shall be final and binding on the parties.

Waste Generation and Management

- 3.58 All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.
- 3.59 The Proponent shall, to the extent that is reasonable and feasible, maximise the treatment, reuse and/or recycling on the project site of any waste oils, excavated soils, vegetation, slurries, sludges or other solid and liquid waste materials associated with the project, to minimise the need for treatment or disposal of those materials outside the power station.
- 3.60 The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.
- 3.61 The Proponent shall ensure that all liquid and/or non-liquid waste generated on the site is assessed and classified in accordance with *Waste Classification Guidelines* (DECCW, 2009), or any superseding document.

4. ENVIRONMENTAL MONITORING AND AUDITING

Operational Noise Review

- 4.1 Within 90 days of the commencement of operation of the project, or as may be agreed by the Director-General, and during a period in which the project is operating under design loads and normal operating conditions, the Proponent shall undertake an **Operational Noise Review** to confirm the noise emission performance of the project. The Review shall be prepared in consultation with, and to the satisfaction of, the DECCW.
- 4.2 Noise monitoring is to be consistent with the guidelines provided in the *New South Wales Industrial Noise Policy* (Environment Protection Authority, 2000) and must include attended noise monitoring at the receiver locations identified in Table 1 and Table 2. The noise assessment must include monitoring of operations that have the potential to cause offensive noise including, but not limited to, safety valve operation, blowdown operation and the operation of circuit breakers during the day, evening and night time periods at the locations defined in condition 3.5 of this approval.
- 4.3 For the purpose of assessment of noise emissions, noise from the project shall be:
- a) measured at the most affected point within the residential boundary or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary;
 - b) measured at one metre from the dwelling facade to determine compliance with the L_{Amax} noise limits specified in Table 1 and in Table 2 of this approval; and
 - c) in the case of the proposed residential areas within the Tallawarra Lands, measured at the most affected point within each residential area.

Notwithstanding, should direct measurement of noise from the project be impractical, the Proponent may employ an alternative noise assessment method deemed acceptable by the DECCW (refer to Section 11 of the *New South Wales Industrial Noise Policy* (Environment Protection Authority, 2000)). Details of such an alternative noise assessment method accepted by the DECCW shall be submitted to the Director-General prior to the implementation of the assessment method.

- 4.4 A report providing the results of the Review shall be submitted to the Director-General and the DECCW within 90 days of completion of the monitoring. The report shall include, but not necessarily be limited to:

- a) a description of the methodologies for noise monitoring, including the location of monitoring sites and frequency of monitoring;
- b) documentation of the operational noise levels at the locations defined in Table 1 and Table 2 of this approval as ascertained by the noise monitoring program;
- c) an assessment of the noise performance of the project against the noise limits specified in Table 1 and Table 2 of this approval and the predicted noise levels as detailed in the report referred to under condition 1.1b) of this approval;
- d) details of the meteorological conditions prevailing during the monitoring; and
- e) details of any entries in the Complaints Register (condition 6.3 of this approval) relating to noise impacts.

Ongoing Operational Noise Monitoring

4.5 The Proponent shall prepare and implement an **Operational Noise Monitoring Program** to assess ongoing compliance against the operational noise limits set out in condition 3.5 of this approval. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the DECCW. Noise monitoring is to be consistent with the guidelines provided in the *New South Wales Industrial Noise Policy* (Environment Protection Authority, 2000) and must include, but not be limited to:

- a) noise monitoring at the locations specified in Table 1 and Table 2 of this approval, in accordance with the requirements of condition 4.3 of this approval;
- b) attended noise monitoring;
- c) monitoring of operations that have the potential to cause offensive noise including, but not limited to, safety valve operation, blowdown operation and the operation of circuit breakers during the day, evening and night time periods; and
- d) monitoring of the effectiveness of any noise mitigation measures implemented under condition 3.6 of this approval, against the noise limits specified in condition 3.5 of this approval.

A report providing the results of the program shall be submitted to the Director-General and the DECCW within 28 days of completion of each monitoring event.

The monitoring program shall form part of the Operational Noise Management Plan referred to in condition 7.5 of this approval.

4.6 Ongoing noise monitoring shall be undertaken by the Proponent on an annual basis and as may be directed by the Director-General. The requirements for ongoing annual noise monitoring will be determined by the Director-General based on the results collected.

Air Quality Monitoring

4.7 The Proponent shall monitor the pollutant concentrations specified in Table 10 at each of the turbine stack discharge points. Monitoring shall be undertaken during operation of the project at the frequency indicated in the Table, unless otherwise agreed to by the DECCW.

Table 10 – Periodic Pollutant and Parameter Monitoring (Air)

Monitoring Point ¹	Pollutant	Units of Measure	Frequency	Sampling Method ²
Discharge Point Identifiers 1, 2 and 3	nitrogen dioxide (NO ₂)(or nitric oxide (NO) or both, as NO ₂ equivalent	milligrams per normalised cubic metre	Continuous (during operation)	CEM-2
Discharge Point Identifier 4	nitrogen dioxide (NO ₂)(or nitric oxide (NO) or both, as NO ₂ equivalent	milligrams per normalised cubic metre	Continuous (during operation)	CEM-2

¹ The monitoring points are as described in Table 3.

² The sampling methods are those specified in the *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (Department of Environment and Conservation, 2007).

Air Quality Performance Verification

- 4.8 Within six months of the commencement of operation of the project, or as may be agreed or directed by the Director-General, and during a period in which the project is operating under normal operating conditions, the Proponent shall undertake a program to confirm the air emission performance of the project. The program shall include, but not necessarily be limited to:
- point source emission sampling and analysis subject to the requirements listed under condition 4.7 to determine compliance with the stack discharge concentration limits identified in condition 3.24;
 - monitoring of the parameters in Table 11 during the operation of the power station;
 - a comprehensive air quality impact assessment in accordance with the methods outlined in *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Department of Environment and Conservation, 2005), using actual air emission data collected under this condition and condition 4.7 to determine performance against the ground-level concentrations limits for air pollutants predicted in the documents listed under condition 1.1b) of this approval; and
 - details of any entries in the Complaints Register (condition 6.3 of this approval) relating to air quality impacts.

A report providing the results of the program shall be submitted to the Director-General and DECCW within the six month period.

Table 11 – Air Quality Verification Monitoring

Monitoring Point	Pollutant	Units of Measure	Sampling Method*
Discharge Point Identifiers 1, 2, 3 and 4	Carbon monoxide (CO)	milligrams per normalised cubic metre	TM-32
	Dry gas density	kilograms per cubic metre	TM-23
	Moisture content of stack gases	percent	TM-22
	Molecular weight of stack gases	grams per gram mole	TM-23
	Nitrogen dioxide (NO ₂) or nitric oxide (NO), or both (as NO ₂ equivalent)	milligrams per normalised cubic metre	TM-11
	Oxygen (O ₂)	percent	TM-25
	Solid particles	milligrams per normalised cubic metre	TM-15
	Speciated organic compounds	milligrams per normalised cubic metre	TM-34
	Sulphur dioxide (SO ₂)	milligrams per normalised cubic metre	TM-4
	Temperature	degrees Celsius	TM-2
	Velocity	metres per second	TM-2
	Volumetric flow rate	cubic metres per second	TM-2

*The sampling methods are those specified in the *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (Department of Environment and Conservation, 2007).

- 4.9 In the event that the program undertaken to satisfy condition 4.8 of this approval indicates that the operation of the project, under design loads and normal operating conditions, will lead to:
- greater point source emissions than the stack discharge concentration limits identified in condition 3.24; or
 - greater ground-level concentrations of air pollutants than that predicted in the documents listed under condition 1.1b) of this approval;
- then the Proponent shall provide details of remedial measures to be implemented to reduce point source emissions or ground-level concentrations of air pollutants to no greater than that predicted in the documents listed under condition 1.1b) of this approval, and to meet the impact assessment criteria detailed in *Approved Methods and Guidance for the Sampling*

and Analysis of Air Pollutants in New South Wales (Department of Environment and Conservation, 2007). Details of the remedial measures and a timetable for implementation shall be submitted to the Director-General for approval within such period as the Director-General may require.

Water Quality Monitoring

- 4.10 In the event that a combined cycle plant is constructed, the Proponent shall continuously monitor with a probe both the water temperature into the power station and the temperature of the combined cooling water discharge from the Tallawarra Stage A and B plants into the outlet canal, downstream of the attemperation mixing zone.
- 4.11 In the event that a combined cycle plant is constructed, the Proponent shall continuously monitor the flow at the inlet waters to the power station and the flow of water discharged from the Tallawarra Stage A and B plants into the outlet canal, downstream of the attemperation mixing zone.
- 4.12 In the event that a combined cycle plant is constructed, the Proponent shall monitor any relevant "assessable pollutants" as specified under the Load Based Licensing Scheme (under the *Protection of the Environment Operations (General) Regulation 2009*) in the combined cooling water discharge from the Tallawarra Stage A and B plants into the outlet canal, downstream of the attemperation mixing zone.
- 4.13 In the event that a combined cycle plant is constructed, the Proponent shall monitor the pollutants specified in Table 12 in the blowdown discharge from the cooling tower system. Monitoring shall be undertaken on a daily basis for the first 30 days of post commissioning operations with the frequency of monitoring to be reviewed and specified by the Director-General following review of the monitoring results for the 30 day period. Daily monitoring is to continue until otherwise approved by the Director-General.

Table 12 - Water Quality Monitoring

Pollutant	Units of Measure	Frequency	Sampling Method
Hydrex 2470	mg/L	Daily	Grab sample with the monitoring methodology as approved by the DECCW
Registered / permitted product containing peracetic acid	mg/L	Daily	Grab sample with the monitoring methodology as approved by the DECCW

Weather Monitoring

- 4.14 The Proponent shall monitor the weather parameters in Table 13 on site in accordance with the specified sampling methods, units of measure, averaging periods and frequency.

Table 13 - Weather Monitoring

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	1 hour	AM-4
Wind speed @ 10 metres	m/s	Continuous	15 minute	AM-2 & AM-4
Wind direction @ 10 metres		Continuous	15 minute	AM-2 & AM-4
Temperature @ 2 metres	°C	Continuous	15 minute	AM-4
Temperature @ 10 metres	°C	Continuous	15 minute	AM-4
Sigma theta @ 10 metres		Continuous	15 minute	AM-2 & AM-4
Solar radiation	W/m ²	Continuous	15 minute	AM-4

Additional requirements - Siting - Measurement				AM-1 & AM-4 AM-2 & AM-4
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Hazard Audit

- 4.15 Twelve months after the commencement of operation of the project, or within such period otherwise agreed by the Director-General, the Proponent shall commission an independent, qualified person or team to undertake a comprehensive Hazard Audit of the project. Further Hazard Audits shall be undertaken every three years thereafter. Hazard Audits shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 5 - Hazard Audit Guidelines*.

5. COMPLIANCE MONITORING AND TRACKING

Compliance Tracking Program

- 5.1 The Proponent shall develop and implement a **Compliance Tracking Program** for the project to track compliance with the requirements of this approval. The program shall relate to both construction and operational stages of the project, and shall include, but not necessarily be limited to:
- provisions for periodic reporting of compliance status against the requirements of this approval and Statement of Commitments (as referred to in the documents listed under condition 1.1 of this approval) to the Director-General, including at least one month prior to both the commencement of construction and commencement of operation of the project;
 - mechanisms for recording incidents and actions taken in response to those incidents;
 - provisions for reporting environmental incidents to the Director-General during construction; and
 - a program for independent environmental auditing carried out in accordance with *AS/NZ ISO 19011:2002 - Guidelines for Quality and/ or Environmental Management Systems Auditing* twelve months after the commencement of operation of the project and every three years thereafter, or as otherwise agreed to by the Director-General; and
 - procedures for rectifying any non-compliance identified during environmental auditing or review of compliance.

The Compliance Tracking Program shall be submitted to the Director-General for approval prior to the commencement of construction of the project.

- 5.2 Nothing in this approval restricts the Proponent from utilising any existing compliance tracking programs administered by the Proponent to satisfy the requirements of condition 5.1. In doing so, the Proponent must demonstrate to the Director-General how these systems address the requirements and/or have been amended to comply with the requirements of the condition.

6. COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

- 6.1 Subject to confidentiality, the Proponent shall make all documents required under condition 6.4 of this approval available for public inspection on request.

Complaints Procedure

- 6.2 Prior to the commencement of construction of the project, the Proponent shall ensure that the following are available for community complaints for the life of the project (i.e. construction and operation):
- a telephone number on which complaints about construction and operational activities at the site may be registered;
 - a postal address to which written complaints may be sent; and
 - an email address to which electronic complaints may be transmitted.

The telephone number, the postal address and the email address shall be displayed on a sign near the entrance to the site, in a position that is clearly visible to the public, and which clearly indicates the purpose of the sign.

The telephone number, postal address and email address shall be published in a newspaper circulating in the local area prior to the commencement of construction of the project and prior to the commencement of operation. The details shall also be provided on the website required by condition 6.4 of this approval.

- 6.3 The Proponent shall record details of all complaints received through the means listed under condition 6.2 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:
- a) the date and time of the complaint;
 - b) the means by which the complaint was made (telephone, mail or email);
 - c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) any action(s) taken by the Proponent in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the Director-General upon request.

The Complaints Register for the project may be incorporated into an existing complaints handling system managed by the Proponent if it is demonstrated to meet the requirements of condition 6.3.

Provision of Electronic Information

- 6.4 Prior to the commencement of construction of the project, the Proponent shall establish a dedicated website or maintain dedicated pages within its existing website for the provision of electronic information associated with the project, subject to confidentiality. The Proponent shall publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to:
- a) information on the statutory context and current implementation status of the project;
 - b) the documents referred to under condition 1.1 of this approval;
 - c) a copy of this approval and any future modification to this approval;
 - d) a copy of each relevant environmental approval, licence or permit required and obtained in relation to the project;
 - e) all plans, monitoring programs and strategies required under this project approval, or details of where hard copies of those documents may be inspected; and
 - f) details of the outcomes of compliance reviews and audits of the project.

Community Consultation

- 6.5 At least one month prior to the commencement of construction of the project, or within such a period otherwise agreed by the Director-General, the Proponent shall prepare and implement a Community Consultation Program. The program shall be ongoing throughout the construction phase of the project and for at least the first 12 months of operation. The program shall include, but not necessarily be limited to:
- a) the general types of information on the timing, progress, construction, operation and environmental management of the project;
 - b) the means by which the information would be provided to the community (for example, presented at regular meetings, published in regular newsletters etc);
 - c) the spatial extent of the community to be consulted; and
 - d) a mechanism through which the community can provide feedback to the Proponent in relation to the environmental management and impacts of the development.

The Program shall be submitted for the approval of the Director-General, prior to the commencement of construction of the development.

7. ENVIRONMENTAL MANAGEMENT

Environmental Representative

- 7.1 At least one month prior to the commencement of any site preparation and/or construction activities, or as otherwise agreed by the Director-General, the Proponent shall nominate for the approval of the Director-General a suitably qualified and experienced Environmental Representative(s) independent of the design and construction personnel. The Proponent shall engage the Environmental Representative(s) during all construction activities, or as otherwise agreed by the Director-General. The Environmental Representative(s) shall be the Proponent's principal point of advice in relation to the environmental performance of the project and shall have responsibility for:
- a) overseeing the implementation of all construction environmental management plans and monitoring programs required under this approval, and advise the Proponent upon the achievement of these plans/programs;
 - b) considering and advising the Proponent on its compliance obligations against all matters specified in the conditions of this approval and the Statement of Commitments as referred to under condition 1.1b) of this approval, and permits and licences; and
 - c) having the authority and independence to recommend to the Proponent reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and, failing the effectiveness of such steps, to recommend to the Proponent that relevant activities are to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur.

Construction Environmental Management Plan

- 7.2 The Proponent shall prepare and implement a **Construction Environmental Management Plan** to outline environmental management practices and procedures to be followed during construction of the project. The Plan shall be consistent with *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004) and shall include, but not necessarily be limited to:
- a) a description of all activities to be undertaken on the site during construction including an indication of stages of construction;
 - b) statutory and other obligations that the Proponent is required to fulfil prior to and during construction including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
 - c) details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified potential adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan -
 - i) measures to monitor and manage dust emissions,
 - ii) measures, prepared in consultation with Wollongong City Council, to reduce the visual impacts of the project, including landscape plans illustrating the proposed landscape planting and any embankment works,
 - iii) measures, prepared in consultation with Wollongong City Council, for managing and reducing potential flooding; and
 - d) electricity transmission route alignment sheets identifying the exact location of the proposed transmission lines and the location of any threatened species, threatened species habitat and Aboriginal objects in the vicinity;
 - e) a description of the roles and responsibilities for key personnel involved in the construction of the project;
 - f) the issue-specific management plans required under condition 7.3 of this approval; and
 - g) complaints handling procedures during construction consistent with condition 6.2 of this approval.

The Plan shall be submitted for the approval of the Director-General no later than one month prior to the commencement of any construction works associated with the project, or within such period otherwise agreed by the Director-General. Construction works shall not commence until written approval has been received from the Director-General.

- 7.3 As part of the Construction Environmental Management Plan for the project, required under condition 7.2 of this approval, the Proponent shall prepare and implement the following:
- a) a **Noise Management Plan** to detail measures to mitigate and manage noise during construction works, consistent with the *Interim Construction Noise Guideline* (Department of Environment and Climate Change, 2009). The Plan shall include, but not necessarily be limited to -
 - i) procedures to ensure that all reasonable noise mitigation measures are applied during construction works,
 - ii) details of construction activities (including construction traffic) and equipment that have the potential to generate noise and/or vibration impacts on sensitive receivers,
 - iii) the construction noise and vibration objectives for the project and all reasonable and feasible noise and vibration mitigation measures that will be implemented to control construction noise and vibration impacts, particularly where the objectives are predicted to be exceeded,
 - iv) procedures for assessing noise levels at sensitive receivers and compliance, and
 - v) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity;
 - b) a **Traffic Management Plan** prepared in consultation with the RTA, Wollongong City Council and emergency services to manage the construction traffic and access impacts of the project including, but not necessarily limited to -
 - i) details of how construction of project infrastructure will be managed in proximity to local and regional roads,
 - ii) details of traffic routes for heavy vehicles, including any necessary route or timing restrictions for oversized loads,
 - iii) construction vehicle volumes (construction personnel, heavy vehicle movements and oversized loads),
 - iv) measures to ensure traffic volume, acoustic and amenity impacts along construction vehicle routes are minimised,
 - v) details of construction activities that would require disruption to traffic such as road closures and measures to minimise impacts,
 - vi) a Construction Vehicle Code of Conduct to set driver behaviour controls to minimise impacts on land uses along haulage routes, and
 - vii) evidence that all statutory responsibilities with regard to road traffic impacts have been complied with;
 - c) **Flora and Fauna Management Plan** to manage flora and fauna impacts during construction. The Plan shall include, but not necessarily be limited to -
 - i) details of all impacted and potentially affected threatened flora and fauna species (including ecological communities) and specific management procedures for each of these species,
 - ii) general management procedures for both the removal of redundant transmission lines and construction of new transmission lines within vegetated areas, including the procedures for clearing vegetation and minimising the extent of clearing, weed management and the rehabilitation of any disturbed vegetation, and
 - iii) proposed revegetation and rehabilitation measures, including completion criteria and monitoring, for any cleared areas, offset areas, and riparian zones along Yallah Creek;
 - d) a **Soil and Water Management Plan** prepared in consultation with Wollongong City Council to detail measures to mitigate and manage soil erosion and the discharge of sediment and other pollutants to land and/or water during construction. The Plan must include, but not necessarily be limited to -
 - a) identification of the construction activities that could cause soil erosion or discharge sediment or water pollutants from the site,

- b) a description of the management methods to minimise soil erosion or discharge of sediment or water pollutants from the site, including a strategy to minimise the area of bare surfaces and stabilise disturbed areas, and plan drawings showing the locations for sediment and erosion control measures,
- c) demonstration that the proposed erosion and sediment control measures will conform with, or exceed, the relevant requirements of *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004),
- d) details on the installation, monitoring and maintenance requirements for each of the recommended measures for erosion and sediment control,
- e) details of stormwater overflow paths and measures for managing overflows,
- f) detailed drawings of any engineering structures such as sediment and evaporation ponds, including design standards and management regimes; and
- e) **Aboriginal Cultural Heritage Management Plan** to manage potential Aboriginal cultural heritage impacts during construction. The Plan shall include, but not necessarily be limited to -
 - i) procedures for the management of any recorded sites within the project area including those required under condition 3.54 of this approval,
 - ii) an Aboriginal Cultural Education Program for the induction of personnel and contractors involved in the construction of the project,
 - iii) details of proposed further archaeological investigations and/or salvage projects prior to impact as required under condition 3.56 of this approval,
 - iv) identification and management of previously unrecorded sites,
 - v) details of an appropriate keeping place agreement with local Aboriginal community representatives for any Aboriginal objects salvaged through the development process, and
 - vi) procedures for ongoing Aboriginal consultation and involvement.

Operation Environmental Management Plan

7.4 The Proponent shall prepare and implement an **Operation Environmental Management Plan** to detail an environmental management framework and the practices and procedures to be followed during operation of the project. The Plan shall be consistent with *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004) and shall include, but not necessarily be limited to:

- a) identification of all relevant statutory and other obligations that the Proponent is required to fulfil in relation to operation of the project, including all relevant approvals, licences, and permits;
- b) overall environmental policies, guidelines and principles to be applied to the operation of the project;
- c) relevant standards to be applied to the project and details of how the environmental performance of the operation of the project will be monitored and managed to meet the standards. Environmental performance issues shall include, but not be limited to –
 - i) measures to monitor and maintain offset measures implemented in accordance with condition 3.41 of this approval,
 - ii) methods to monitor and maintain revegetated areas (including riparian areas) during the establishment phase and long term,
 - iii) ongoing measures to monitor and control the spread of weeds,
 - iv) ongoing measures to control soil erosion and sedimentation;
 - v) water management plan, prepared in consultation with the DECCW, identifying clean water and dirty water (i.e. waste water streams) areas on site maps, waste water volumes, sources and pollutants, and details of the water management measures to be implemented to manage the specific pollutant streams and clean water runoff,
 - vi) procedures for planned and unplanned water discharges from the site, and
 - vii) emergency response procedures in the event of flooding;
- d) a description of the roles and responsibilities for all relevant employees involved in the operation of the project;

- e) a means by which environmental performance can be periodically reviewed and improved, where appropriate and what actions will be taken to address identified potential adverse environmental impacts;
- f) the additional plans listed under condition 7.5 of this approval;
- g) management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval; and
- h) the environmental monitoring requirements outlined under conditions 4.5 to 4.14 of this approval, inclusive.

The Plan shall be submitted for the approval of the Director-General no later than one month prior to the commencement of operation of the project, or within such period otherwise agreed by the Director-General. Operation shall not commence until written approval has been received from the Director-General.

7.5 As part of the Operation Environmental Management Plan for the project, required under condition 7.4 of this approval, the Proponent shall prepare and implement the following Management Plans:

- a) an **Air Quality Management Plan** to outline measures to manage impacts from the project on local and regional air quality. The Plan shall include, but not necessarily be limited to -
 - i) identification of all major sources of particulate and gaseous air pollutants that may be emitted from the project, being both point-source and diffuse emissions, including identification of the major components and quantities of these emissions,
 - ii) monitoring for gaseous and particulate emissions from the project,
 - iii) procedures for the minimisation of gaseous and particulate emissions from the project, including pro-active and reactive management and response mechanisms, with specific reference to measures to be implemented and actions to be taken to minimise and prevent potential elevated air quality impacts on surrounding land uses as a consequence of meteorological conditions, upsets within the project, or the mode of operation of the project at any time,
 - iv) specific procedures for the management of generating efficiency and the minimisation of greenhouse gas emissions per unit of electricity generated,
 - v) procedures aimed at maximising the efficiency of the start-up and shut-down cycles for the project,
 - vi) provision for regular review of air quality monitoring data, with comparison of results against the predictions made in the document listed under condition 1.1b) of this approval,
 - vii) plans for regular maintenance of process equipment to minimise the potential for leaks and fugitive emissions, and
 - viii) a contingency plan should an incident, process upset or other initiating factor lead to elevated air quality impacts, whether above normal operating conditions or environmental performance goals/ limits; and
- b) a **Noise Management Plan** to detail measures to mitigate and manage noise during operation of the project. The Plan shall include, but not necessarily be limited to -
 - i) identification of the noise limits specified under this approval,
 - ii) identification of operational activities that will be carried out and the associated noise sources,
 - iii) details of all management methods, procedures and mitigation measures that will be implemented to control individual and overall noise emissions from the site during operation,
 - iv) procedures for periodic consideration of noise impacts against the noise limits specified under this approval,
 - v) noise monitoring and reporting procedures, and
 - vi) procedures to generate suitable documentation for annual environmental auditing, that demonstrates that the noise limits specified under this approval are being met.

8. ENVIRONMENTAL REPORTING

Incident Reporting

- 8.1 Within 24 hours of any incident with significant off-site impacts on people or the biophysical environment, a report shall be supplied to the Department outlining the basic facts. A further detailed report shall be prepared and submitted following investigation of the cause(s), describing the incident, remedial action undertaken and any necessary additional preventive measures incorporated into the operation of the project. That report must be submitted to the Director-General no later than 14 days after the incident or potential incident.
- 8.2 The Proponent shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this approval.
- 8.3 The Proponent shall maintain a register of incidents and this shall be made available for inspection at any time by the Director-General.

Annual Performance Reporting

- 8.4 The Proponent shall prepare and submit for the approval of the Director-General, an **Annual Environmental Management Report**. The Report shall review the performance of the project against the Operation Environmental Management Plan (refer to condition 7.4 of this approval) and the conditions of this approval. The Report shall include, but not necessarily be limited to:
- a) details of compliance with the conditions of this approval;
 - b) a copy of the Complaints Register (refer to condition 6.3 of this approval) for the preceding twelve-month period (exclusive of personal details), and details of how these complaints were addressed and resolved;
 - c) results of all environmental monitoring required under this approval, including interpretations and discussion by a suitably qualified person;
 - d) identification of any circumstances in the preceding twelve-month period where environmental performance goals for the project have not been achieved, including achievement against the predicted performances set out in the documents listed under condition 1.1 of this approval; and
 - e) details of the action taken and/or additional mitigation measures applied to the project to prevent recurrence of such circumstances.

The Proponent shall submit a copy of the Annual Environmental Management Report to the Director-General every year, with the first Report to be submitted no later than 12 months after the commencement of operation of the project. After a period of three years, the Director-General will review the frequency of reporting.

The Director-General may require the Proponent to address certain matters in relation to the environmental performance of the project in response to review of the Report. Any action required to be undertaken shall be completed within such period as the Director-General may require.

The Proponent shall make copies of each Annual Environmental Management Report available on its website.
