



## Appendix E

# Consistency with the statement of commitments for the Bamarang Gas Turbine Facility



The following table considers the consistency of the statement of commitments in Chapter 8 with those in the Proposed Gas Power Facility at Bamarang Submissions Report (2006). The commitments highlighted in blue have been deleted as they are not relevant to this stage of the project, or have been superseded. The remaining commitments have been retained or amended, as presented in Chapter 9. Commitments highlighted in green are new commitments developed as an outcome of this environmental assessment. These have been included in the statement of commitments presented in Chapter 9.

Issue	Commitment	Timing	Consistency
<b>Overall commitments</b>			
Obligation to minimise harm to the environment	Delta confirms its commitment to ensuring that all practicable measures are implemented to prevent or minimise any impacts to the environment that may arise from the construction, commissioning and operation and where relevant, the decommissioning of the proposal.	-	Commitment retained
Staging of development	<p>Delta confirms its intention to construct the proposal <b>either in two separate stages, or concurrently.</b></p> <p><b>Should staged construction occur,</b> prior to the construction of stage two of the proposal, Delta would submit to the Director-General:</p> <ul style="list-style-type: none"> <li>» <b>Confirmation of the water sources and supply options for stage two;</b></li> <li>» A demonstration that, based on extrapolation of relevant monitoring data established during the operation of stage one of the proposal, that the progression to stage two would not cause any air quality impacts above those predicted; and</li> <li>» An updated construction environmental management plan to reflect the inclusion of stage two works.</li> </ul> <p><b>Should staged construction occur,</b> construction of stage two would not proceed until Delta has received written approval of the above documents and addressed any further requirements that may form part of the approval.</p> <p><b>Should concurrent construction occur, prior to construction commencing,</b> Delta would submit to the Director-General a construction environmental management plan to reflect the concurrent construction of both stage one (as approved on 27 February 2007) and stage two works.</p>	-	<p>Commitment amended. The two stages may now be constructed concurrently. In the event that concurrent construction occurs, there will not be an opportunity to conduct air quality monitoring. In addition, a single environmental management plan would be prepared covering both stages.</p> <p>This document provides confirmation of the water sources and supply options for stage two.</p>
Restriction to fuel consumption	Delta would only operate the proposal on natural gas for routine firing in the power station turbines. Delta would not use liquid fuels to fire the proposal without written the approval of the Director-General.	-	
Acquisition of land and land management	<b>Prior to the commencement of construction, easements for the gas pipeline and electricity transmission line would be acquired where necessary in accordance with the requirements of the Crown Lands Act 1989 and the Land Acquisition (Just Terms Compensation) Act 1991.</b>		NA – easements are currently being acquired.



Issue	Commitment	Timing	Consistency
<b>Mitigation measures</b>			
Air quality	<p><i>Operating conditions</i></p> <p>Natural gas is the only fuel to be used for firing the power station turbines.</p> <p>All activities at the premises would be undertaken in a manner that does not cause or permit the emission of offensive odour beyond the boundary of the premises.</p> <p>In stage one, the proposed facility would only operate to meet peak demand.</p> <p>All plant and equipment installed at the premises or used in conjunction with the construction or operation of the facility activity would be maintained in a proper and efficient condition and would be operated in a proper and efficient manner.</p>	Operation	Commitment amended. Text in blue relates to stage one.
	<p><i>Discharge limits</i></p> <p>The project air quality goals specified by the project approval for stage two are achieved.</p> <p>The proposal would be designed and operated to ensure that the concentration of each pollutant listed in Table 7.4 of this environmental assessment (GHD, March 2008) would not be exceeded for each discharge point.</p>	Design, operation	Commitment amended to reflect this stage and this environmental assessment.
	<p><i>Dust emissions</i></p> <p>All activities undertaken would be carried out in a manner that minimises the generation of dust, or emission of dust from the site, including wind-blown and traffic-generated dust. Measures proposed to minimise dust would be specified in the construction and operation environmental management plans, and would include those listed in Section 8.1.5 of the environmental assessment.</p>	Construction, operation	Commitment amended. Text indicated in blue deleted to maintain consistency with this environmental assessment.
Greenhouse	<p><i>Delta's greenhouse commitments</i></p> <p>Delta would continue to meet its commitments under the Commonwealth Government's Generator Efficiency Standards and Greenhouse Challenge (Plus) Program. Under these agreements, Delta is committed to achieving greenhouse gas emissions abatement through diversification of its generation portfolio, reflecting community and government expectations of a sustainable future for electricity generation. Delta's approach to greenhouse gas abatement includes:</p> <ul style="list-style-type: none"> <li>» Minimising impacts of existing coal-fired plants</li> <li>» Investigating transitional, combined technologies</li> <li>» Developing new renewable energy technologies for the future</li> </ul>	Construction, operation	Commitment retained
Flora and fauna	<p><i>Physical works to prevent off-site impacts</i></p> <p>Fencing of proposed development areas to ensure construction works do not breach the boundaries or enter the adjacent vegetation and National Parks and Reserves.</p> <p>Sediment and erosion control measures to be implemented.</p> <p>Placement of stockpiles away from vegetated areas.</p> <p>Piling of soil that may contain seed of exotic species away from adjacent vegetation or drainage lines where they could be spread during rainfall events.</p> <p>Maintenance of a vegetated buffer between any development and the adjacent reserve.</p>	Construction	Commitment retained



Issue	Commitment	Timing	Consistency
	<p><i>Protection measures</i></p> <p>A more thorough inspection of the disused abattoir prior to demolition to verify the absence of the Eastern Bent-wing Bat.</p> <p>Retention of mature, hollow bearing trees within the study area (where possible).</p>	Pre-construction	NA – abattoir commitment relates to stage one. Retention of hollow bearing trees commitment retained
	<p><i>Maintenance measures for easement</i></p> <p>Allowance for regeneration to maximum acceptable height along drainage lines supporting potential habitat for Nowra Heath-myrtle.</p> <p>Retention of mature, hollow bearing trees within the study area (where possible).</p> <p>Where avoidance of hollow-bearing trees is not possible, hollow-bearing branches and trunks would be carefully removed and checked by an ecologist for any fauna and then placed within the adjacent woodland to provide habitat for other fauna species.</p> <p>Monitoring and management of weed invasion along the proposed gas pipeline route to ensure regeneration of native species takes place.</p> <p>Fencing of proposed development areas to ensure construction works do not breach the boundaries or enter the adjacent vegetation and National Parks and Reserves.</p>	Design, construction	NA – commitments relate to stage one. If concurrent construction, both stage one and stage two project approvals would apply, and commitments made in both stage one and stage two environmental assessments would apply.
	<p><i>Offsets</i></p> <p>Delta commits to continuing discussions with DEC on habitat offsets.</p> <p>Consistent with the requirements of the project approval for stage one, Delta will provide a compensatory habitat package in accordance with DECC requirements, for the total area of vegetation removed by stages one and two.</p>	Design	Commitment amended
Bushfire hazard	<p><i>Fire management measures</i></p> <p>Asset protection zones to be implemented in accordance with the provisions outlined in <a href="#">Section 7.4 of this environmental assessment (GHD, March 2008)</a>. <a href="#">the Bushfire Risk Assessment report (GHD 2005)</a>.</p>	Construction, operation	Commitment amended. Asset protection zones amended as a result of modified layout.
	<p><i>Building standards</i></p> <p>Level 2 (AS 3959 – 1999) Construction Standards to apply where relevant.</p> <p>Combustible materials likely to be impacted by radiant heat would not be used in the construction of the gas fired power facility.</p>	Design	Commitment retained



Issue	Commitment	Timing	Consistency
	<p><i>Operation environmental management plan</i></p> <p>The operation environmental management plan would include fire prevention measures to be implemented during construction, including but not limited to:</p> <ul style="list-style-type: none"> <li>» Work involving risk of ignition would not be carried out during periods of total fire ban;</li> <li>» Fire suppression equipment would be available on site;</li> <li>» Appropriate storage and maintenance of fuels and other flammable materials.</li> <li>» Evacuation procedures would also be detailed for any persons located at the gas fired power facility during a bushfire; and</li> <li>» The local Rural Fire Service control centre would be notified of the dates of construction, dates during which 'hot works' are to be conducted would be highlighted.</li> </ul>	Operation	Commitment retained
Water	<p><i>Water quality</i></p> <p>All activities at the premises must be undertaken in a manner that does not cause or permit water pollution as defined in the <i>Protection of the Environment Operations Act 1997</i>.</p>	Design, construction, operation	Commitment retained
	<p><i>Recycling</i></p> <p>The recycling of stormwater during operation (for ancillary use), as described in the 2006 environmental assessment, is maximised through:</p> <ul style="list-style-type: none"> <li>» Provision of stormwater retention strategies and infiltration;</li> <li>» Rainwater harvesting; and</li> <li>» Management and monitoring of onsite water related activities and infrastructure.</li> </ul>	Operation	Commitment retained and amended
	<p><i>Further investigations prior to stage two</i></p> <p>When the need for stage two of the facility is confirmed, Delta commits to undertaking a detailed study of water supply options, and an environmental impact assessment of the preferred option and/or any modification to the proposal, prior to the commencement of stage two.</p>	Prior to stage two	NA – commitment relates to stage one. Investigations have been undertaken, as reported in this environmental assessment.
Noise and vibration	<p><i>Noise emission limits</i></p> <p>The project noise criteria specified in Table 9.2 and 9.3 of the 2006 environmental assessment are achieved.</p> <p>The proposal would be designed, constructed and operated to ensure that noise criteria are not exceeded. The contractor responsible for the design and management of the facility would be required to meet noise criteria.</p>	Design, construction, operation	Commitment retained
	<p><i>Construction time restrictions</i></p> <ul style="list-style-type: none"> <li>» Monday to Friday – 7am - 6pm;</li> <li>» Saturday – 7am to 1pm if inaudible at a residential premises; otherwise 8am to 1pm; and</li> <li>» No work on Sundays or Public Holidays.</li> </ul>	Construction	Commitment retained
	<p><i>Noise attenuation on machinery</i></p> <p>All practical measures would be used to silence construction equipment, particularly in instances where extended hours of operation are required.</p>	Construction	Commitment retained



Issue	Commitment	Timing	Consistency
	<p><i>Noise management strategy to be prepared</i></p> <ul style="list-style-type: none"> <li>» A noise management strategy would be prepared as part of the construction environmental management plan, detailing the methodology proposed by the construction contractor and the relative phasing of different construction activities in different areas. This would also outline a program of operational noise monitoring.</li> <li>» To achieve the construction noise criteria at the closest residence (Location 1) the overall sound power level from construction as a guide should not exceed approximately 112 dB(A).</li> </ul>	Construction	Commitment retained
Soils, contamination	<p><i>Removal of wastes</i></p> <p>All dumped and buried wastes are removed from the site, either prior to, or as part of the development process.</p>	Construction	Commitment retained
	<p><i>Evidence of oily or putrescible wastes</i></p> <p>If evidence of putrescible or oily / liquid wastes are noted during removal, then these materials would be sampled and analysed, to permit classification for off-site treatment and disposal, in accordance with the Environmental Guideline Assessment, Classification and Management of Liquid and Non-Liquid Wastes (NSW EPA, May 1999).</p>	Construction	Commitment retained
	<p><i>Decommission fuel storage facilities</i></p> <p>All existing fuel storage facilities would be appropriately decommissioned and removed prior to site development.</p>	Construction	NA – commitment relates to stage one. If concurrent construction, both stage one and stage two project approvals would apply, and commitments made in both stage one and stage two environmental assessments would apply.
Soils	<p><i>Prepare a management plan</i></p> <p>A construction phase soil and water management plan would be prepared as part of the construction environmental management plan, detailing control mechanisms to be implemented during the construction phase.</p>	Construction	Commitment retained
	<p><i>Ensure appropriate environmental controls</i></p> <p>During the construction phase (including site construction, plus pipeline / transmission line installation), soil and groundwater would be protected from contamination via the installation of appropriate bunds, drainage networks and (if required) lined detention basins.</p>	Construction	Commitment retained
	<p><i>Supervision of subsurface works</i></p> <p>An appropriately qualified environmental consultant, who would conduct real-time air monitoring of the excavation zone (using a photoionisation detector) would supervise excavation works along Yalwal Road in West Nowra.</p>	Construction	NA – commitment relates to stage one
	<p><i>OH&amp;S plan to be developed</i></p> <p>A detailed Occupational Health and Safety (OH&amp;S) Plan would be developed, prior to excavation works occurring, documenting OH&amp;S protocols to be adopted during the excavation works.</p>	Construction	NA – commitment relates to stage one



Issue	Commitment	Timing	Consistency
	<p><i>Contingency planning</i></p> <p>A contingency plan would be developed, documenting procedures to be adopted in the event that potentially contaminated soils or uncontrolled fill is encountered during excavation works.</p>	Pre-Construction	Commitment retained
	<p><i>Chemical storage</i></p> <p>Chemicals would be stored in designated and secure bunded chemical storage compounds, designed and constructed in accordance with relevant Australian Standards. Regular inspections and integrity testing of the systems will be undertaken to ensure that these systems comply with relevant standards and continue to provide adequate protection against fuel and oil spills.</p>	Design	NA – commitment relates to stage one. If concurrent construction, both stage one and stage two project approvals would apply, and commitments made in both stage one and stage two environmental assessments would apply.
Hazards and risk	<p><i>Design features</i></p> <p>The following design features would be implemented:</p> <ul style="list-style-type: none"> <li>» Undertaking a detailed HAZOP during design and incorporate recommended measures;</li> <li>» Installation of a fire protection system in accordance with the requirements of the Building Code of Australia;</li> <li>» Compliance with dangerous goods storage and transport codes, regular inspections and maintenance of critical components;</li> <li>» Bunding of chemical storage tanks; and</li> <li>» Standard operating procedures for activities, which could have the potential to cause hazards or risks.</li> </ul>	Design	Commitment retained
	<p><i>Undertake risk and hazard assessments</i></p> <p>Prepare (if concurrent construction) or update from stage one (if staged construction) and implement the following as part of the operation environmental management plan:</p> <ul style="list-style-type: none"> <li>» Construction safety study;</li> <li>» Fire safety study;</li> <li>» HAZOP;</li> <li>» Emergency plan;</li> <li>» Safety management system; and</li> <li>» Hazard auditing.</li> </ul>	Design, operation	Commitment amended to reflect possibility of staged or concurrent construction
	<p><i>Management procedures to be implemented</i></p> <p>Management procedures would be implemented incorporating practices to prevent risk scenarios occurring:</p> <ul style="list-style-type: none"> <li>» Minimising build-up of combustible materials on-site; and</li> <li>» Installing bollards/protective barriers around gas metering station.</li> </ul>	Design, construction, operation	Commitment retained
	<p><i>Emergency management procedures to be developed</i></p> <p>Emergency management procedures would be developed (if concurrent construction) or updated from stage one (if staged construction) for response to fire and explosion that may be initiated from either on-site or off-site sources</p>	Construction	Commitment retained



Issue	Commitment	Timing	Consistency
Visual amenity and landscape	<i>Take advantage of existing cleared areas</i> Maximise the use of existing cleared areas for on-site facilities and the electricity transmission line.	Design	NA – commitment relates to stage one
	<i>Retain vegetation</i> Retention of existing vegetation outside the areas required to be cleared (for fire protection, facility footprint and transmission corridors).	Design/ Construction	Commitment amended. Text indicated in blue deleted as it relates to stage one.
	<i>Maintain existing understorey</i> Maintaining the existing understorey beneath the transmission line where possible.	Design/ Construction	Commitment retained
	<i>Additional tree planting</i> Additional tree planting at the site entrance.	Operation	Commitment retained
	<i>Appropriate building materials</i> Appropriate choice of building materials and treatments, including: » Minimal use of reflective elements, and use of textual cladding where practicable. » Use of darker green/brown colour tones on the buildings and plant to minimise the potential for contrast with surrounding bushland. » Use of a lighter green colour on the upper portion of built elements (including stacks) to minimise the potential for contrast with the sky and treetops.	Design	Commitment retained
	<i>Navigation lighting</i> The need for obstruction warning lighting at the top of the proposed stacks would be determined during the detailed design phase in consultation with the Civil Aviation Safety Authority and the Department of Defence.		Commitment retained
Cultural heritage	<i>Avoid sites if possible</i> » Where practical, disturbance to site BG1 would be avoided, or limited to the existing areas of disturbed ground adjacent to the Yalwal Road verge. If avoidance were feasible, then the area with surface artefacts would be temporarily fenced to identify a 'no-go' area excluding machinery and ground disturbing activities. » Where practical, disturbance to site BG2 would be avoided.	Construction	NA – commitment relates to stage one
	<i>Management of sites if disturbance is necessary</i> » If impact were anticipated in the areas of sites BG1 and BG2, then the surface artefacts would be managed according to the requirements of the local Aboriginal community. This may involve their placement in nearby locations away from the construction zone, or alternatively, their permanent recovery for placement in a Keeping Place or Museum. The allowance of disturbance with no mitigation may also be an option for community consideration. » If impact is anticipated in the area of the potential archaeological deposit associated with BG1, then a limited archaeological program of salvage excavation would be conducted in the anticipated disturbance areas such as the pits for the placement of transmission line poles.	Construction	NA – commitment relates to stage one





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Traffic	<p><i>Recommended management measures</i></p> <ul style="list-style-type: none"> <li>» Temporary reduction to the signposted speed limit on Yalwal Road.</li> <li>» Installation and operation of traffic control devices provided in AS 1742.3-1996 Traffic Control Devices for Works on Roads.</li> <li>» Additional advanced warning signage on both approaches to the bridge on Yalwal Road to the east of the site.</li> <li>» Limit heavy vehicle movement during peak commuter periods and encourage movement during the off peak period.</li> <li>» Adequate area and management controls would be introduced at the site entry to safely control the movement of vehicle into and from the site, including excavation materials need to be covered before trucks leaving the site.</li> <li>» Loading, unloading and manoeuvring of vehicles would always occur on-site and must be in accordance to AS2890.1 and AS2890.2.</li> <li>» All construction worker parking spaces would be provided off road/ on-site during the entire construction period.</li> </ul>	Construction	Commitment retained
	<p><i>Site access</i></p> <p>A rural type 'A' intersection would be installed at the access point to the site.</p>	Operation	NA – relates to stage one
<b>Environmental management and monitoring</b>			
Environmental representative	<p>If staged construction, prior to the commencement of construction of stage two, Delta would appoint a qualified and experienced environmental management representative on a full-time basis during the construction, commissioning and operation of the development.</p> <p>If concurrent construction, a single Environmental Management Representative would be appointed for construction of both stages one and two.</p>		Commitment retained in edited form to reflect staged or concurrent construction
Construction environmental management plan	<p>If staged construction, a construction environmental management plan would be prepared prior to the commencement of stage two and implemented. If concurrent construction, a single construction environmental management plan would be prepared and implemented.</p> <p>The construction environmental management plan would outline environmental management practices and procedures to be followed during site preparation, construction and commissioning of the gas turbine facility as a whole.</p>		<p>Commitment retained in edited form to reflect staged or concurrent construction.</p> <p>Commitment summarised as detailed commitment in stage one project approval still applies even if constructed concurrently.</p>
Operation environmental management plan	<p>Delta would update its existing Environmental Management System to incorporate the operation of the proposal. A dedicated operation environmental management plan would be developed for the operation of the gas turbine facility as a whole. The management plan would incorporate monitoring measures in accordance with the conditions of approval for the project</p>		Commitment retained in edited form. The commitment has been summarised to reflect the current stage of the project.



Issue	Commitment	Timing	Consistency
Auditing	<p>Twelve months after the commencement of operation of stage two of the project, Delta would commission and independent, suitably qualified person or team to prepare, to the satisfaction of the Director-General, the following:</p> <ul style="list-style-type: none"><li>» Hazard audit report; and</li><li>» Environmental audit report.</li></ul>		Commitment retained in edited form. The commitment has been summarised to reflect the current stage of the project.



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#### **Document Status**

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