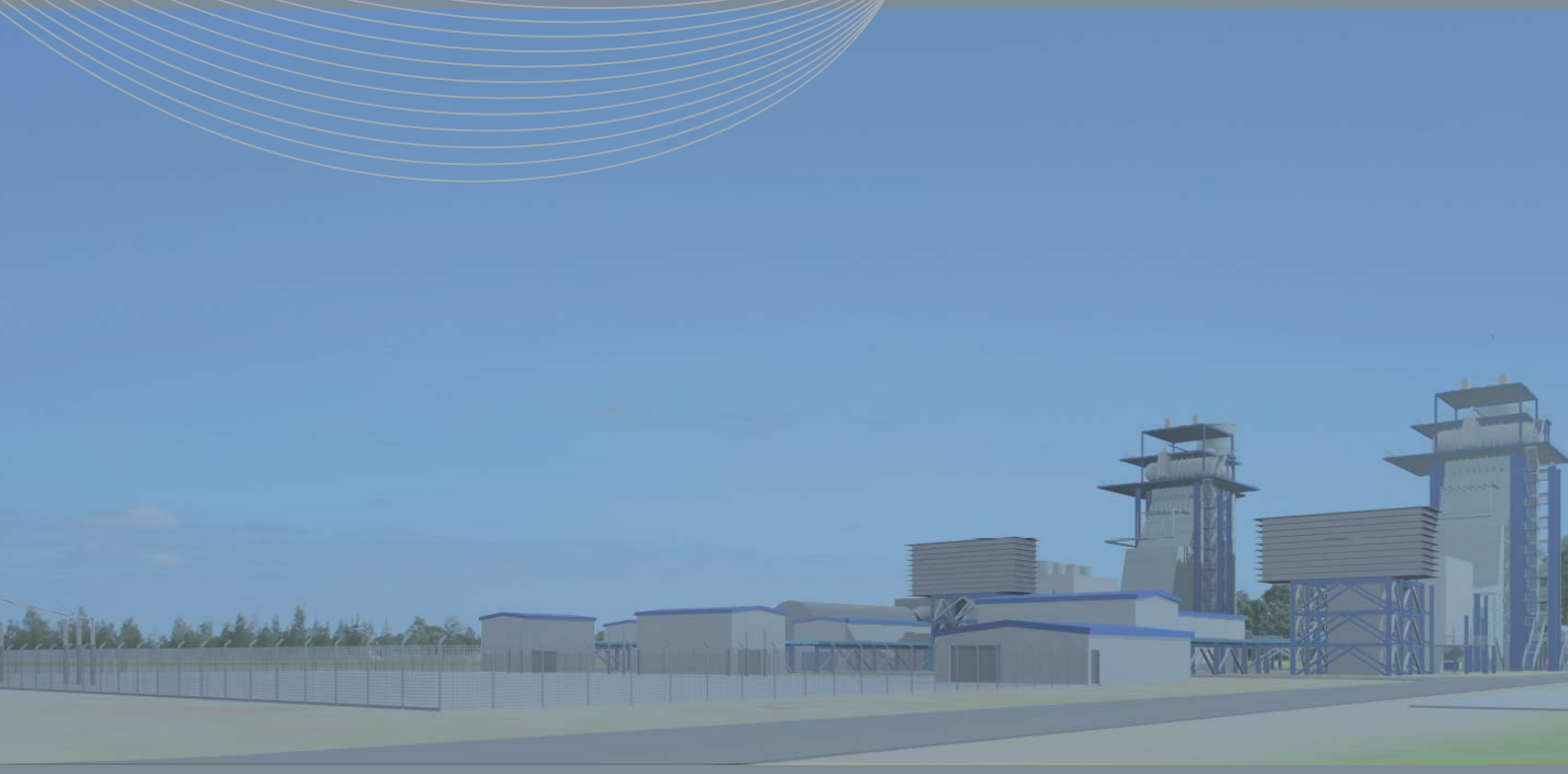
GHD CLIENTS | PEOPLE | PERFORMANCE

Delta electricity



# Part D
## Commitments and conclusion

# Chapter 10. Draft statement of commitments

Section 75F(6) of the EP&A Act states that 'the Director-General may require the proponent to include in an environmental assessment a statement of the commitments the proponent is prepared to make for environmental management and mitigation measures on the site.'. In accordance with this requirement, this section provides Delta's commitments for environmental mitigation, management and monitoring for the project.

## 10.1 Overall commitments

### 10.1.1 Obligation to minimise harm to the environment

Delta confirms its commitment to ensuring that all practicable measures to prevent or minimise any impacts to the environment that may arise form the construction, commissioning and operation and where relevant, the decommissioning of the proposal.

### 10.1.2 Staging of development

Delta confirms its intention to construct the proposal in two stages. Prior to the construction of stage two of the proposal, Delta would submit to the Director-General:

» Confirmation of the water sources and supply options for stage two;

» 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

» An updated construction environmental management plan to reflect the inclusion of stage two works.

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.

### 10.1.3 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.

### 10.1.4 Acquisition of land and land management

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*.

## 10.2 Mitigation Measures

Delta commits to implement the measures outlined in Table 10.1 to minimise the potential for environmental impacts.

**Table 10.1 Mitigation measures**

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| Air quality | The project air quality goals listed in Table 10.2 are achieved. | *Discharge limits*<br>The proposal would be designed and operated to ensure that the concentration of each pollutant listed in Table 8.4 would not be exceeded for each discharge point. | Design, operation |
| | | *Dust emissions*<br>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. | Construction, operation |
| Greenhouse | 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:<br>» Minimising impacts of existing coal-fired plants<br>» Investigating transitional, combined technologies<br>» Developing new renewable energy technologies for the future | Construction, operation |
| Flora and fauna | Natural ecosystems protected from off-site impacts such as surface water drainage. | *Physical works to prevent off-site impacts*<br>Fencing of proposed development areas to ensure construction works do not breach the boundaries or enter the adjacent vegetation and National Parks and Reserves.<br>Sediment and erosion control measures to be implemented.<br>Placement of stockpiles away from vegetated areas.<br>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.<br>Maintenance of a vegetated buffer between any development and the adjacent reserve. | Construction |
| | Habitat located on the site protected. | *Protection measures*<br>A more thorough inspection of the disused abattoir prior to demolition to verify the absence of the Eastern Bent-wing Bat.<br>Retention of mature, hollow bearing trees within the study area (where possible). | Pre-construction |

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| | Habitat values of land maintained. | *Maintenance measures for easement*<br>Allowance for regeneration to maximum acceptable height along drainage lines supporting potential habitat for Nowra Heath-myrtle.<br>Retention of mature, hollow bearing trees within the study area (where possible).<br>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.<br>Monitoring and management of weed invasion along the proposed gas pipeline route to ensure regeneration of native species takes place.<br>Fencing of proposed development areas to ensure construction works do not breach the boundaries or enter the adjacent vegetation and National Parks and Reserves.<br>*Offsets*<br>Delta commits to commencing discussions with DEC on habitat offsets. | Design, construction |
| Bushfire hazard | Bushfire hazards and risks are reduced. | *Fire management measures*<br>Asset protection zones to be implemented in accordance with the provisions outlined in the Bushfire Risk Assessment report (GHD 2005). | Construction, operation |
| | | *Building standards*<br>Level 2 (AS 3959 – 1999) Construction Standards to apply where relevant.<br>Combustible materials likely to be impacted by radiant heat would not used in the construction of the gas fired power facility. | Design |
| | | The operation environmental management plan would include fire prevention measures to be implemented during construction, including but not limited to:<br>» Work involving risk of ignition would not be carried out during periods of total fire ban;<br>» Fire suppression equipment would be available on site;<br>» Appropriate storage and maintenance of fuels and other flammable materials.<br>» Evacuation procedures would also be detailed for any persons located at the gas fired power facility during a bushfire; and<br>» 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. | Operation |
| Water | Quality and flows of receiving waters protected. No impacts on Bamarang Reservoir. | All activities undertaken would be carried out in a manner that minimises erosion and sedimentation. Measures proposed would be specified in the construction environmental management plan, and would include those listed in Section 8.5.6 | Construction |

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| | | Site drainage and stormwater management features designed in accordance with the stormwater management plan shown in Figure 8.8. | Design, operation |
| | Recycling of water maximised | » Provision of stormwater retention strategies and infiltration.<br>» Rainwater harvesting.<br>» Management and monitoring of onsite water related activities and infrastructure. | Operation |
| Noise and vibration | The project noise criteria listed in Table 9.2 and 9.3 are achieved. | *Noise emission limits*<br>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. | Design, construction, operation |
| | | *Construction time restrictions*<br>» Monday to Friday – 7am - 6pm;<br>» Saturday – 7am to 1pm if inaudible at a residential premises; otherwise 8am to 1pm; and<br>» No work on Sundays or Public Holidays. | Construction |
| | | *Noise attenuation on machinery*<br>All practical measures would be used to silence construction equipment, particularly in instances where extended hours of operation are required. | Construction |
| | | *Noise management strategy to be prepared*<br>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. | Construction |
| Soils | The environment is protected from any unnecessary spills or contaminating activities | *Removal of wastes*<br>All dumped and buried wastes are removed from the site, either prior to, or as part of the development process. | Construction |
| | | *Evidence of oily or putrescible wastes*<br>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). | Construction |

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| | | *Decommission fuel storage facilities*<br>All existing fuel storage facilities would be appropriately decommissioned and removed prior to site development. | Construction |
| | No contaminated soils are disturbed | *Prepare a management plan*<br>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. | Construction |
| | | *Ensure appropriate environmental controls*<br>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. | Construction |
| | | *Supervision of subsurface works*<br>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. | Construction |
| | | *OH&S pan to be developed*<br>A detailed Occupational Health and Safety (OH&S) Plan would be developed, prior to excavation works occurring, documenting OH&S protocols to be adopted during the excavation works. | Construction |
| | | *Contingency planning*<br>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 | Pre-Construction |

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| Hazards and risk | Reduce risk on to property and life in the event of an emergency | *Design features*<br>The following design features would be implemented:<br>» Undertaking a detailed HAZOP during design and incorporate recommended measures;<br>» Installation of a fire protection system in accordance with the requirements of the Building Code of Australia;<br>» Compliance with dangerous goods storage and transport codes, regular inspections and maintenance of critical components;<br>» Bunding of chemical storage tanks; and<br>» Standard operating procedures for activities, which could have the potential to cause hazards or risks. | Design |
| | Potential risks are identified at all stages of construction and operation | *Undertake risk and hazard assessments*<br>Prepare and implement the following as part of the operation environmental management plan:<br>» Construction safety study;<br>» Fire safety study;<br>» HAZOP;<br>» Emergency plan;<br>» Safety management system; and<br>» Hazard auditing. | Design, operation |
| | Any risks are removed before they become problems | *Management procedures to be implemented*<br>Management procedures would be implemented incorporating practices to prevent risk scenarios occurring:<br>» Minimising build-up of combustible materials on-site; and<br>» Installing bollards/protective barriers around gas metering station. | Design, construction, operation |
| | | *Emergency management procedures to be developed*<br>Emergency management procedures would be developed for response to fire and explosion that may be initiated from either on-site or off-site sources | Construction |
| Visual amenity and landscape | Minimise the visual impact of the proposal on the landscape | *Take advantage of existing cleared areas*<br>Maximise the use of existing cleared areas for on-site facilities and the electricity transmission line. | Design |

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| | | *Retain vegetation*<br>Retention of existing vegetation outside the areas required to be cleared (for fire protection, facility footprint and transmission corridors). | Design/Construction |
| | | *Maintain existing understorey*<br>Maintaining the existing understorey beneath the transmission line where possible. | Design/Construction |
| | | *Additional tree planting*<br>Additional tree planting at the site entrance. | Operation |
| | | *Appropriate building materials*<br>Appropriate choice of building materials and treatments, including:<br>» Minimal use of reflective elements, and use of textual cladding where practicable.<br>» Use of darker green/brown colour tones on the buildings and plant to minimise the potential for contrast with surrounding bushland.<br>» 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 |
| Cultural heritage | Appropriate management of Aboriginal heritage | *Avoid sites if possible*<br>» 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.<br>» Where practical, disturbance to site BG2 would be avoided. | Construction |
| | | *Management of sites if disturbance is necessary*<br>» 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.<br>» 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 |

| Environmental issue | Commitment | | Timing |
|---|---|---|---|
| | **Outcome** | **Measures** | |
| | | *Copies of reports provided to stakeholders*<br>» Three copies of the Aboriginal Cultural Heritage Assessment would be provided to the Southern Aboriginal Heritage Unit at DEC.<br>» One copy of the Aboriginal Cultural Heritage Assessment would be provided to Nowra Local Aboriginal Lands Council and Jerrinja Local Aboriginal Lands Council. | Pre-construction |
| Traffic | Construction traffic movements operate in a safe environment | *Recommended management measures*<br>» Temporary reduction to the signposted speed limit on Yalwal Road.<br>» Installation and operation of traffic control devices provided in AS 1742.3-1996 Traffic Control Devices for Works on Roads.<br>» Additional advanced warning signage on both approaches to the bridge on Yalwal Road to the east of the site.<br>» Limit heavy vehicle movement during peak commuter periods and encourage movement during the off peak period.<br>» 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.<br>» Loading, unloading and manoeuvring of vehicles would always occur on-site and must be in accordance to AS2890.1 and AS2890.2.<br>» All construction worker parking spaces would be provided off road/ on-site during the entire construction period. | Construction |
| | Safe site access is provided | A rural type 'A' intersection would be installed at the access point to the site. | Operation |

## 10.3 Environmental management

### 10.3.1 Environmental representative

Prior to the commencement of construction of the development, Delta would appoint a qualified and experienced environmental management representative on a full-time basis during the construction, commissioning and operation of the development. The environmental management representative would be:

» The main point of contact in relation to the environmental performance of the proposal;

» Responsible for all management plans and monitoring programs required under the conditions of consent;

» Responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the proposal; and

» Responsible for receiving and responding to community contact and enquiries during the life of the project.

### 10.3.2 Construction environmental management plan

A construction environmental management plan would be prepared and implemented. The construction environmental management plan would outline environmental management practices and procedures to be followed during site preparation, construction and commissioning of stages one and two of the proposal.

The construction environmental management plan would cover the environmental protection practices, resources and sequence of activities required to comply with relevant environmental legislation, conditions of any applicable licence, approval and permit. The plan would include:

» A description of all activities to be undertaken on the site during site preparation, construction and commissioning of the stage of the development being undertaken;

» Statutory approvals and other obligations that would be fulfilled during site preparation, construction and commissioning, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;

» Details of how the environmental performance of the site preparation and construction works would be monitored, and what actions would be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues would be addressed:

  – Measures to monitor and manage dust emissions;

  – Measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction

  – Measures to monitor and manage any contaminated soils/ materials encountered during construction and demolition;

  - Measures to monitor and manage any groundwater encountered during construction and demolition;
  - Measures to monitor and control noise emissions during construction and commissioning;
  - Measures to monitor and control air emissions during construction and commissioning, and to ensure that air emissions are both minimised and in compliance with the requirements of this consent and the Environment Protection Licence for the site;
  - Measures to manage traffic during construction; and
  - Measures to manage bushfire risk.
- A description of the roles and responsibilities for all relevant employees involved in the construction of the development;
- The management plans and mitigation requirements listed in Table 10.1 relevant to construction and commissioning; and
- Complaints handling procedures during construction.

### 10.3.3 Operation environmental management plan

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 proposal and this would include:

- Environmental policy, objectives and performance targets for operation;
- Identification of all statutory and other obligations, including consents, licences, approvals and voluntary agreements;
- Identification of the roles and responsibilities of all personnel and contractors to be employed on site;
- Management policies, procedures and review processes to assess the implementation of environmental management practices and the environmental performance of the proposal against the objectives and targets;
- The management plans and mitigation requirements listed in Table 10.1 relevant to operation;
- Incorporation of environmental protection measures and instructions in all relevant Standard Operating Procedures and Emergency Response Procedures;
- The environmental monitoring practices described in Section 10.4; and
- Specific procedures in relation to the following, as defined by this environmental assessment and the conditions of consent for the proposal:
  - Air quality management;
  - Emergency planning;
  - Safety management;
  - Soil and water management;
  - Landscape management; and
  - Noise management.

# 10.4 Monitoring

## 10.4.1 Air quality

Emissions to air from the proposal would be subject to Continuous Emissions Monitoring Systems (CEMS). The CEMS would collect and analyse gas samples and record continuous data from the stack exits.

Delta would establish pollutant concentrations and emissions parameters to be monitored in accordance with the requirements specified in 'Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales' (DEC, 2005). This would include location of the sampling points on the discharge stacks in accordance with the requirements set out in test method TM-1. Monitoring would be undertaken annually or in accordance with frequency and requirements otherwise specified in the conditions of approval. Proposed monitoring measures are summarised in Table 10.2.

**Table 10.2 Periodic pollutant and parameter monitoring (air)**

| Pollutant/Parameter | Units of Measure | Method | Frequency |
|---|---|---|---|
| Nitrogen dioxide ($NO_2$) or nitrous oxide (NO) or both as $NO_2$ | $mgm^3$ | CEM-2 | Continuous |
| Velocity | $ms^1$ | TM-2 | Within 90 days of commissioning and annually |
| Volumetric flow rate | $m^3s^1$ | TM-2 | |
| Temperature | $^oC$ | TM-2 | |
| Moisture | % | TM-22 | |
| Dry gas density | $kgm^3$ | TM-23 | |
| Molecular weight of stack gas | $g.gmol^1$ | TM-23 | |
| Carbon dioxide | % | TM-24 | |
| Oxygen | % | TM-25 | |

## 10.4.2 Greenhouse gas emissions

Greenhouse gas emissions are not monitored by physical sampling, however, annual greenhouse gas inventories are prepared using approved AGO emissions estimation techniques. Each year, further opportunities for emissions abatement are identified and implemented wherever practicable.

## 10.4.3 Water quality

Monitoring would be undertaken to ensure that stormwater management measures are working effectively. Monitoring would rely primarily on visual inspections and sampling. Visual inspections would be undertaken of sediment basins, pits, diversion and catch drains and all other stormwater conveyance structures. A general indication of frequencies for inspections is provided in Table 10.3. An inspection log detailing the monitoring program would be kept.

**Table 10.3 Monitoring program**

| Sample location | Collection mechanism | Frequency first six months | Frequency normal operation |
|---|---|---|---|
| Sediment basins | Visual Inspection | Every runoff event | Monthly |
| Inlet pits | Visual Inspection | Every runoff event | Monthly |
| Trunk drainage channels | Visual Inspection | Every runoff event | Monthly |
| Overland flow paths | Visual Inspection | Every runoff event | Monthly |
| Trafficable areas | Visual Inspection | Every month | |
| Bunded areas | Visual Inspection | Every runoff event | |
| Other works areas, potentially contaminating stormwater | Visual Inspection and system operation testing | Every month | |

Notes:

» Runoff event must be sufficient;

» Inspect after 24 hour retention period (ie 24 hrs after runoff event);

» For every inspection, date, time and ambient weather conditions would be recorded.

### 10.4.4 Noise

Noise monitoring during construction and operation would be undertaken at the following locations:

» Lot 22 DP 746233;

» 213 Gannet Road; and

» Bamarang 190 Road.

Monitoring would consist of unattended continuous noise logging for one week on a quarterly basis, with operator-attended noise measurements over 15 minute periods also conducted during this quarterly monitoring. All noise monitoring would be completed in accordance with the requirements of AS 1055-1997 Acoustics – Description and Measurement of Environmental Noise, and the NSW Industrial Noise Policy.

### 10.4.5 Auditing

Delta has a rigorous audit program that covers facilities and processes, compliance with legislative and industry best practice requirements, and environmental management systems. The current proposal would be subject to the same auditing rigour as for Delta's other facilities. Specifically, the audit program would cover three levels:

» Internal audit – which is conducted by trained Delta personnel on a regular basis;

» External audit – which is conducted bi-annually be an independent and appropriated qualified third party for facilities and process, compliance, environmental management system and compliance with the ESAA Code of Environmental Practice; and

» DEC audit – which may be conducted at random intervals determined by the authority.

Revision of the Delta environmental management system, to incorporate the requirements for the proposal, would detail the audit program for the operational facility.

Twelve months after the commencement of operation of stage one, Delta would commission and independent, suitably qualified person or team to prepare, to the satisfaction of the Director-General, the following:

» Hazard audit report; and

» Environmental audit report.

# Chapter 11. Project justification and conclusion

## 11.1 Achieving the objectives

### 11.1.1 Electricity demand

Analysis of electricity supply and demand shows that the level of demand is increasing by approximately four percent per year in NSW, with summer peak load demand growing by approximately 500 megawatts per year. Based on current rates of supply, it is predicted that NSW would need to rely on imports from interstate to meet minimum requirements from 2005/2006, and that by 2008/09, NSW would not be able to source additional supply from other regions (NEMMCO 2005; NSW Government 2004).

Stage one of the proposal would generate electricity to meet peak demands. Stage two would generate a constant supply of electricity to meet NSW's electricity needs in the medium to long term.

Chapter 5 examined the strategic need for additional generation capacity in NSW in the short-term, and in the longer term, the need for a facility with the ability to provide a constant source of energy.

As NSW approaches projected future deficits between available generation and network capacity and demand, with a greater focus on peak demand (where 18% of generation capacity is used for 1% of the year), there is an ever-increasing need to provide additional generation capacity, in turn allowing certainty of supply to consumers as well as industry and commerce.

As a result of the immediate demand for electricity during peak periods, a gas power facility is proposed.

Open cycle gas facilities are considered to be the preferred option for meeting peak demands, because they can be built for a relatively low capital cost in a short timeframe, and are able to achieve full generation capacity from start up in a relatively short period of time.

### 11.1.2 Environmental performance

The environmental performance of any facility is critical to ensuring long-term sustainability targets are met, especially in the case of a fossil fuel based generation facility. However, an opportunity for long-term increased environmental performance is possible through the use of specifications to equipment manufacturers and tenderers.

These specifications would stipulate the legislative and operational requirements and any conditions of consent for the proposal. This would allow Delta to ensure high-levels of environmental performance and would ensure would equipment installed on site is to the highest environmental performance within the power generation industry.

It is noted that the major components of the proposal (such as the gas turbines, heat recovery steam generators and steam turbine) would be selected following a competitive tendering process, which

would occur as part of the detailed design development of the proposal. It is expected that the components selected would be 'off the shelf' units, provided by manufacturers. Components would be evaluated and selected on the basis of proven efficiency and reliability, and conformance with the specifications. The specifications provided to prospective equipment suppliers would dictate the technical and environmental performance the units would be expected to meet, based on Delta's operational requirements and the conditions of consent for the proposal.

This would be required to assist in controlling a number of potential environmental impacts associated with:

» Noise;

» Air quality;

» Water quality; and

» Potential hazards.

For example, in the case of air quality, equipment specifications can be performance based and nominate particular upper limits on concentrations of airborne contaminants, such as unburnt hydrocarbons, $NO_x$ and particulates.

A major attraction of gas is its relative greenhouse efficiency compared to coal fired generation. Combined cycle gas generation emits approximately 0.4 tonnes of $CO_2$ per megawatt hour of electricity produced. This is less than half the level set for the NSW pool coefficient (0.913 tonnes of $CO_2$ per megawatt hour of electricity in 2005). Open cycle gas generation emits approximately 0.6 tonnes of $CO_2$ per megawatt hour

Further, the adoption of all the management measures outlined in Chapter 10 would ensure that the proposal operates in an efficient and environmentally responsible way. Delta's environmental commitments across NSW would assist the achievement of all environmental goals associated with the proposal.

## 11.2 Sustainability

Clause 6 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* outlines the requirements of an environmental assessment, including:

> *"The reasons justifying the carrying out of the development or activity in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development"*

The Regulation lists the principles of Ecologically Sustainable Development as:

> *a) the **precautionary principle**, namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*
>
> *(b) **inter-generational equity**, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*

*(c)* ***conservation of biological diversity and ecological integrity****, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*

*(d)* ***improved valuation, pricing and incentive mechanisms****, namely, that environmental factors should be included in the valuation of assets and services.*

The following provides an assessment of the proposal against the above criteria, and takes into account the findings of this environmental assessment.

### 11.2.1 Precautionary Principle

The assessment of the potential impacts of the proposal is considered to be consistent with the precautionary principle. It is considered that the assessments presented throughout this environmental assessment are consistent with rigorous scientific and professional methodologies and have been undertaken in collaboration with key stakeholders.

These investigations have identified a number of potential impacts of the proposal on the local or regional environment. Where impacts have been identified, a number of management measures have been nominated to reduce, or remove, the impacts. These include:

» Air quality;

» Noise;

» Water cycle management;

» Flora and fauna;

» Bushfire hazard;

» Cultural heritage); and

» Potential risks and hazards associated with the proposal.

It is considered that these management measures, outlined in Chapter 10, would satisfactorily protect the environment during both the construction and operational phases. Further, any contractor awarded the site works would be required to prepare a detailed environmental management plan detailing measures to be put in place to manage environmental and other issues identified.

It is recommended that environmental performance in relation to the plans be regularly assessed through external environmental audits. The audits would also assist in assessing the adequacy of safeguards implemented to minimise environmental impacts associated with the construction on the site and the operation of the facility.

The proposed facility would use modern technology with known consequences and effects. The technology to be employed in the facility is used throughout the world for power generation, thereby reducing the potential for unknown impacts.

### 11.2.2 Intergenerational Equity

The proposal has identified no long term impacts associated with the operation or construction of the proposed facility that would lead to the degradation of the environment. This, in concert with the proposed management and mitigation measures, would ensure that the potential for any long-term impacts are significantly decreased.

Similarly, the site selection, on a generally previously cleared site, utilising existing transmission infrastructure where available, ensures the protection of the status quo and reduces the need to change the natural form of the site.

### 11.2.3 Conservation of biological diversity and ecological integrity

The site has previously been significantly modified as part of an earlier proposal for an abattoir, with many structures present on site and much of the area required by the generation facility cleared. This facilitates a less intrusive site development and ensures that there is minimal impact on the local biological diversity and ecological integrity.

Studies conducted in conjunction with this environmental assessment have identified that there would be no significant impacts on threatened or endangered species as a result of the proposal. Mitigation measures, where identified to be beneficial to the environment and flora and fauna species, are recommended during both the construction and operation phase of the proposal to ensure adequate protection and conservation.

### 11.2.4 Improved valuation and pricing of environmental resources

This environmental assessment has identified the environmental and other consequences of the proposal and identified mitigation measures where appropriate to manage adverse impacts. Construction of the proposal would be required to be in accordance with relevant legislation and any Construction Management Plan or Environmental Management Plan prepared prior to construction.

Requirements imposed in terms of implementation of proposed management measures represent a cost to the proponent and any contractors. The implementation of these measures would also increase the capital and operating costs of the proposal, signifying that environmental costs have been appropriately valued as part of the impact assessment process.

Detailed design of the proposal would ensure that a minimal environmental footprint would be created by the proposal, ensuring that it is developed with an environmental objective and imperative in mind.

## 11.3 Consequences of not proceeding

It has been noted elsewhere in this environmental assessment that a number of power generation facility projects have either received approval or under consideration. It has also been noted that these facilities combined will only adequately be able to account for up to three years' growth in the energy market.

Stage one of the proposal would add approximately 280 megawatts of electricity into the energy network, during a peak periods. Stage two would add approximately 400 megawatts constant supply.

As demonstrated in Chapter 5 there is a need for the proposal – without the construction of additional power supplies demand will outstrip availability on the network. This may lead to a number of negative impacts on the NSW economy including:

» Decreased productivity due to 'downtime' and brown/black outs;

» Potential for the loss or diversion of investment due to the lack of security of energy supply;

» Labour market implications of these combined forces;

» Potential impacts on domestic consumers from restriction on supply to ensure adequate power to all sources; and

» Inflationary pressure due to increases in prices from demand and supply issues within the market.

This list is by no means exhaustive, but illustrates the necessity of the proposal in relation to the continued effective meeting of demand for electricity supply. The impacts do not solely relate to economic issues, but these would effectively have the most significant impacts on the state should the proposal not proceed.

## 11.4 Conclusion

This environmental assessment has considered the potential impacts of the proposed development of a gas power facility on Yalwal Road, Bamarang near Nowra in the local government area of Shoalhaven. The environmental assessment has been prepared by GHD on behalf of Delta Electricity to assist the Minister for Planning in assessing the proposal.

The environmental assessment has been prepared in accordance with the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979* and the requirements of the Director-General of the Department of Planning and issues raised by other statutory agencies.

It provides an assessment of the potential environmental impacts of the proposal, considering both the potential positive and negative impacts of the proposal, and recommending management and mitigation measures to protect the environment where required.

Overall, the proposal would:

» Improve the surety of power supply to NSW during peak demand periods (stage one of the proposal);

» Provide NSW with a long-term generation facility to satisfy base demand for electricity in NSW (stage two of the proposal);

» Allow for the future expansion of the NSW economy by providing enough electricity for growth in the future; and

» Utilise existing infrastructure for transmission purposes and existing fuel supplies to generate electricity in a cleaner manner than traditional coal-fired generation.

The environmental assessment has examined a number of key issues surrounding the proposal, including the identification of a number of negative impacts. Of which the main potential impacts requiring management are:

» Potential air quality issues associated with the proposal;

» Management of greenhouse gas emissions;

» Noise-related impacts associated with construction and operation of the site;

» Visual impacts associated with the construction of such a facility in a largely unoccupied/rural area; and

» Construction impacts (traffic generation, soil and water management etc).

To manage these potential impacts, and in some cases remove them completely, Chapter 10 outlines a number of management measures that would be undertaken. Both the construction and operation of the site would require the employment of best practice management techniques. The recommendations include the preparation of a construction management plan and environmental management plan to ensure that all recommendations are developed, implemented and monitored to ensure compliance with relevant legislation and conditions imposed.

The proposal, as discussed earlier, would provide security in the NSW energy market to supply the state with projected demand levels over the coming years. The proposed program and staging of the proposal is related to both economic (for Delta) and timing factors in relation to demand. The proposal would use the recently constructed infrastructure of the Eastern Gas Pipeline to generate electricity. It would also use existing transmission corridors to deliver power to the market.

Environmental impacts associated with the proposed power station have been identified within the environmental assessment and in accordance with the requirements of the Director-General of the Department of Planning. If impacts have been considered negative then environmental management measures have been proposed.

No significantly adverse impacts have been identified within the environmental assessment or the specialist studies that accompany it. It is therefore recommended that the proposal receive approval, subject to any appropriate conditions and the draft statement of commitments presented in Chapter 10.

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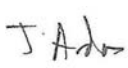
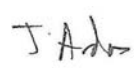
| 1 | A Raleigh | J Ardas |  | J Ardas |  | 18/4/06 |
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