Director-General's Requirements

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

Project	Construction and operation of a new base load power station and associated infrastructure with a maximum generating capacity of 2000 megawatts. The power station would be powered by either coal (using ultra-supercritical generation technology) or natural gas (using combined cycle generation technology).
Site	Adjacent to the existing Bayswater Power Station site off the New England Highway, approximately 20 kilometres south of Muswellbrook.
Proponent	Macquarie Generation
Date of Issue	4 July 2009
Date of Expiration	4 July 2011
General Requirements	The Environmental Assessment must include: • an **executive summary**; • a **description of the proposal** including: ➢ details of project construction, operation, decommissioning, staging and key ancillary infrastructure (e.g. transmission line connection, ash disposal, haulage roads, fuel delivery and storage) under both coal fired and gas generation scenarios including identification of likely worst case development footprint; ➢ details of the extent to which existing infrastructure and facilities (including water sourcing and ash disposal) would be used for the project; ➢ identification of fuel source options for the project and feasibility of those options; and ➢ supporting maps/plans clearly identifying existing environmental features (e.g. watercourses, vegetation), infrastructure and landuse (including nearby residences and any approved sensitive landuse) and the siting of the project in the context of this existing environment; • consideration of any **relevant statutory provisions** including the consistency of the project with the objects of the *Environmental Planning and Assessment Act 1979;* • an **assessment of the key issues** outlined below, during construction, operation and decommissioning (as relevant). The Environmental Assessment must assess the worst case as well as representative impact for all key issues considering cumulative impacts, as applicable, from the adjacent Bayswater-Liddell generating complex and surrounding mining development (as relevant) considering both coal fired and gas generation scenarios including associated key ancillary components (as relevant); • a **draft Statement of Commitments** detailing measures for environmental mitigation, management and monitoring for the project; • a **conclusion justifying the project** taking into consideration the environmental, social and economic impacts of the project; the suitability of the site; and the public interest; and • **certification** by the author of the Environmental Assessment that the information contained in the assessment is neither false nor misleading.
Key Assessment Requirements	The Environmental Assessment must include assessment of the following key issues: • **Strategic Planning and Justification** – the Environmental Assessment must: → include a strategic assessment of the need, scale, scope and location for the project in relation to predicted electricity demand, transmission constraints and the strategic direction of the region and the State in relation to electricity supply, demand and electricity generation technologies; → include an analysis of site suitability with respect to potential land use conflicts with existing and future land uses (including existing and approved residential development and mineral reserves) taking into account local and strategic landuse objectives; and

Bridge St Office 23-33 Bridge St Sydney NSW 2000 GPO Box 39 Sydney NSW 2001
Telephone (02) 9228 6111 Facsimile (02) 9228 6191 DX 10181 Sydney Stock Exchange
Website planning.nsw.gov.au

→ describe alternatives considered for the project in particular technology and configuration including fuel source, air emission, water use and options for waste disposal/ beneficial reuse and provide justification for the project demonstrating its benefits at a local and strategic scale in comparison to alternatives considered, including the do nothing option.

- **Greenhouse Gases** – the Environmental Assessment must include a comprehensive greenhouse gas assessment undertaken in accordance with the methodology specified in the *National Greenhouse Accounts (NGA) Factors* (Department of Climate Change, November 2008) including:
  - → quantification of emissions (in tonnes of carbon dioxide equivalent) in accordance with the *Greenhouse Gas Protocol: Corporate Standard (World Council for Sustainable Business Development & World Resources Institute)* including: direct emissions (Scope 1), indirect emissions from electricity (Scope 2) and any significant up or down stream emissions (Scope 3) considering all stages of the project (construction, operation and decommissioning);
  - → comparison of predicted emissions intensity and thermal efficiency against best achievable practice and current NSW averages for the activity, and of predicted emissions against total annual national emissions (expressed as a percentage of total national greenhouse gases production per year over the life of the project);
  - → evaluation of the availability and feasibility of measures to reduce and/ or offset the greenhouse emissions of the project including options for carbon capture and storage. Where current available mitigation technology is not technically or economically feasible, the Environmental Assessment must demonstrate that the proposal will use best available technology, including carbon capture readiness, and identify options for triggers that would require staged implementation of emerging mitigation technologies; and
  - → evaluation of the project in the light of carbon emission prices of $10, $25 and $50 per tonne under the proposed Commonwealth Carbon Pollution Reduction Scheme, both with and without proposed mitigation measures.

- **Air Quality Impacts** – the Environmental Assessment must include a comprehensive air quality impact assessment prepared in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DECC, 2005) (Approved Methods) considering worst case operating scenarios and meteorological conditions, representative monitoring and receiver locations and cumulative impacts, as applicable, from the adjacent Bayswater-Liddell generating complex and surrounding mining operations (as relevant). The Environmental Assessment must address air quality impacts at a local, regional and interregional level, assess the potential impacts of emissions on photochemical smog formation in the Sydney basin, give consideration to cumulative fluoride emissions and the potential for contribution to acid deposition considering surrounding sensitive landuse (such as viticulture). The assessment must demonstrate that the project would meet the impact assessment criteria in Section 7 of the Approved Methods and the requirements of the *Protection of the Environment Operations (Clean Air) Regulation 2002.* The Environmental Assessment must clearly demonstrate that the project has been designed to include the application of Best Available Control Technology (BACT) in relation to air emissions. The assessment must include a framework for the mitigation, management and monitoring of air quality impacts, particularly with respect to sensitive receptors likely to be significantly impacted by cumulative air quality impacts in the local area.

- **Water Cycle Management** — the Environmental Assessment must:
  - → include a water balance for the project identifying indicative water use, wastewater generation and disposal requirements for the operation of the project;
  - → demonstrate the availability of viable water sources to sustainabley meet the water requirements of the project for the life of the project. Consideration shall be given to water reuse and recycling options (including use of treated effluent, rainwater, on site treatment and use of mine waste

water), the security of supply, current and future water demand in the region and potential impacts on other users; and

→ reflect a design philosophy of zero water discharge from the site, except for natural surface water flows and provide an assessment of the likely risks to water quality associated with the project considering key ancillary components (such as ash disposal).

- **Noise Impacts** - the Environmental Assessment must include a comprehensive operational noise impact assessment for the project, prepared in accordance with *NSW Industrial Noise Policy* (EPA, 2000) considering worst case operating scenarios and meteorological conditions, representative monitoring and receiver locations, and cumulative impacts from the adjacent Bayswater-Liddell generating complex, surrounding mining operations (as relevant) and the connection/upgrade of the Antiene coal conveyer. The assessment must consider the potential for low frequency noise generation and peak noise events with the potential to cause sleep disturbance. The Environmental Assessment must also consider the potential for:
  - → construction noise impacts consistent with the DECC's "construction noise - existing guidelines" available electronically at http://www.environment.nsw.gov.au/noise/constructnoise.htm
  - → vibration impacts during construction and operation consistent with *Assessing Vibration: A Technical Guideline* (DECC, 2006); and
  - → traffic generated noise during construction and operation consistent with *Environmental Criteria for Road Traffic Noise* (EPA, 1999).

  The Environmental Assessment must include a framework for the mitigation, management and monitoring of noise impacts, particularly with respect to sensitive receptors likely to be significantly impacted by cumulative noise impacts in the local area.

- **Ecological Impacts** – the Environmental Assessment must include an assessment of the impacts on native vegetation, threatened species, populations, ecological communities and their habitats (both terrestrial and aquatic as relevant). The Environmental Assessment must include a screening of species, populations, ecological communities and habitats based on ecological significance and the potential for impact as a consequence of the project. For species, populations, ecological communities and habitats with high ecological significance and significant potential for impact, include sufficient information to demonstrate the likely impacts, consistent with *Guidelines for Threatened Species Assessment* (DEC & DPI, July 2005). The Environmental Assessment must include an assessment of impacts to aquatic and riparian values where waterway crossings are proposed. The assessment must demonstrate a design philosophy of impact avoidance on ecological values, and in particular, ecological values of high significance and include a framework for the further consideration of ecological impacts at the project approval stage, and during detailed design of the project, including options for mitigation and/ or offset consistent with "improve or maintain" principles. Sufficient details must be provided to demonstrate the availability of viable and achievable options to offset the impacts of the project.

- **Heritage Impacts** – the Environmental Assessment must include sufficient information to demonstrate the likely impacts on Aboriginal heritage values/items (archaeological and cultural) and proposed mitigation measures consistent with the Draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005). The Environmental Assessment must demonstrate effective consultation with Aboriginal communities has been undertaken in determining and assessing impacts and mitigation measures.

- **Visual Impacts** – the Environmental Assessment must include an assessment of the visual impact of the project from representative viewing points including residential receivers, settlements and significant public view points and include a framework for the mitigation and management of visual amenity impacts on

	affected receivers. An overview of the effectiveness and reliability of the measures and any residual impacts after the implementation of such measures must be included. • **Hazards and Risk Impacts** – the Environmental Assessment must include a screening of potential hazards on site to determine the potential for off site impacts and any requirement for a Preliminary Hazard Analysis (PHA). The Environmental Assessment must also provide a preliminary screening of potential risks to aviation safety associated with the exhaust plumes from the operation of the project with consideration to the Commonwealth Civil Aviation Safety Authority's Advisory Circular *Guidelines for Conducting Plume Rise Assessments* (June 2004). • **Waste Management** – identification of the major waste streams to be generated by the proposal (including waste from water treatment and coal ash) and measures for its management and disposal including options for recycling and reuse where reasonable and feasible. • **General Environmental Risk Analysis** – notwithstanding the above key assessment requirements, the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of the additional key environmental impact(s) must be included in the Environmental Assessment.
Consultation Requirements	You must undertake an appropriate and justified level of consultation with the following parties during the preparation of the Environmental Assessment: • Commonwealth Department of Climate Change; • NSW Department of Environment and Climate Change; • NSW Department of Water and Energy; • NSW Department of Primary Industries; • Singleton Council; • Muswellbrook Shire Council; and • the local community. The Environmental Assessment must clearly describe the consultation process and indicate the issues raised by stakeholders during consultation and how these matters have been addressed.