11. Project Justification

This chapter provides a review of information that provides the basis for justification of the modification to the development of Woodlawn Wind Farm with the addition of three turbines.

11.1 Overview

In summary, the modification is justified for the following reasons:

- It utilises renewable energy to produce an additional 6.3 MW of electrical power when operating at full capacity, increasing the cumulative capacity of the wind farm to about 48 MW of power.
- It provides additional generating plant to assist the National Electricity Market (NEM) to be able to meet forecast demands
- Additional renewable energy generation assists the diversification of supply sources and can increase security of supplies
- By displacing generation from fossil fuels it can help reduce the carbon intensity of electricity generation and provide savings in the of greenhouse gas emissions of an additional 22,000 tonnes per year compared to generation by coal fired plant. This is an estimated cumulative greenhouse gas savings of 168,000 tonnes per year.
- When implemented in accordance with the controls identified in this document, it does not compromise environmental values at the locality including ecological, heritage, soils or water quality and does not place undue stress on local resources
- It assists achievement of the Government's eRET and emission reduction objectives
- It provides additional income to the land owner on which the additional turbines will be located
- The development is located on cleared grazing land and is able to operate compatibly with the existing grazing operations
- It increases the commercial viability of the wind farm development that will assist Woodlawn Wind to meet its business objectives
- The overall project is likely to provide a small but significant boost to the local economy
- The project has been designed to limit impacts on the local community
- The project complies with the requirements for inter-generational equity

While the modification to the project has a range of positive features, impacts that could be considered by some stakeholders as adverse include changes to the landscape of the wind farm locality and increased traffic on local roads during the construction period. Construction impacts are manageable and short term. The operational impacts will mostly be minor and outweighed by the positive environmental benefits of the project. Nevertheless, the visual impact of the operating wind farm with the additional turbines for some neighbours may be of concern and would only be avoided if the wind farm were not built. The option of not increasing the Wind Farm capacity reduces the State of NSW's progress toward an increased level of sustainable energy generation and forgoes an opportunity for abatement of greenhouse gas emissions.

Some of the above aspects are outlined below and further described in other sections of the Environmental Assessment and its appendices.

11.2 Additional Generation Capacity

The modification to the project provides additional generating capacity that can provide renewable energy over its proposed operating life of around 25 years. Its location between the major electrical load centres of Canberra and Wollongong, where the electricity may be consumed, is advantageous in that electrical transmission losses will be minimised. Studies by the Australian Greenhouse Office indicate that NSW has considerable ability to integrate additional wind energy generation capacity without adverse effects on the existing electricity network.

11.3 Acceptability of Environmental and Social Impacts

The project takes account of the biophysical aspects of the environment including flora and fauna, soil, water and air and social aspects. Comprehensive assessments of relevant issues have been undertaken and are incorporated or appended to the Supplementary SEE. Where necessary, mitigation measures have been proposed to mitigate the potential environmental impacts.

The key environmental aspects addressed in the Supplementary SEE are outlined below:

- **Greenhouse Gas Emissions:** The project will deliver net savings in greenhouse gas emissions.
- **Visual Aspects:** The three additional turbines will be visible from parts of the local area which may be regarded by some members of the community as an adverse impact. However, overall it is expected that there will be broad community acceptance of the additional turbines. The favourable association with renewable energy, lack of greenhouse gas emissions and the integration with existing rural activities are considered by many people to be positive attributes of the proposed wind farm.
- **Land Use:** The additional turbine sites and associated infrastructure are located on are heavily grazed sheep paddocks and are also highly modified environments. Existing grazing activities and nearby industrial activity will not be significantly affected by the development.

  The proposed modifications to the development are consistent with the zoning objectives of the Mulwaree LEP. At the end of its useful life, the turbines can be decommissioned and removed from site.
- **Flora and Fauna Aspects:** The proposed modification to the wind farm requires minor clearing of mainly exotic grasses and will avoid impacts on areas of sensitive vegetation or vegetation with important habitat potential. Impacts on avifauna, which were addressed in the original 2004 EIS have been assessed as being very low and in the case of threatened species, not significant.
- **Noise Aspects:** The nearest residences to the additional three turbine sites are more than 2 km from the proposed turbines. There are no predicted noise exceedances at neighbouring residences.
- **Soil Aspects:** The extent of ground surface disturbance affects only a small part of the overall site. Erosion and sediment controls will be implemented during all earthworks.
- **Water Aspects:** There will be no off-site discharges. Controls to avoid spillage of oil or erosion and sediment loss from the site will be supported by emergency response procedures, where required.
- **Air Aspects:** The additional development will result in low project life-cycle air emissions allowing for manufacture, transport, erections and operation of the plant. The emissions from the additional turbines will be significantly less than those of most other electricity generating stations. Dust from earthworks during construction will be controlled in accordance with the project CEMP.
- **Aboriginal Heritage:** Potential archaeological deposits sites have been indicated at the additional turbine sites and access road route. The proposed locations of the additional turbines have been adjusted to avoid these areas. It has been recommended by the heritage consultant that no further investigation is required, due to the extensive investigations that have been undertaken in adjacent areas. Appropriate monitoring of construction works will be conducted, and all consultation will be in accordance with the Cultural Heritage Management Sub Plan for the site.

- **Socio-Economic:** The overall project will require a modest workforce during the construction and operational stages. The number of people required for the project is unlikely to change with the addition of three turbines and the associated infrastructure to that described in the original 2004 EIS. The overall project will provide a worthwhile contribution to the local economy over its lifetime.

- **Traffic and Transport:** The additional construction required for the additional sites will result in a slight increase in the predicted traffic for over-mass and over-size vehicles. However, the Traffic Management Plan will be updated in consultation with the local Traffic Management Committee to include the additional proposed works and ensure works can be undertaken safely and with minimal disruption to local traffic. The proponent is also obligated under the current project approval to inspect and monitor the condition of the local roads during the construction works. Once operational, the traffic visiting the site will be low.

- **Electromagnetic Interference:** Potential for interference to telecommunication has been assessed and indicated some potential for interference to television reception at an additional residence. Mitigation options have been identified and can be applied following commissioning if required. No additional interference was identified as a result of the proposed construction of the additional three turbines.

- **Safety Risks and Hazards:** A Bushfire Management Plan has been prepared as a component of the project Construction Environmental Management Plan to mitigate the risks of bushfires starting as a result of construction, operation, maintenance and decommissioning activities of the wind farm. Subject to approval of the additional sites, the Bushfire Management Plan will be updated to include the additional sites, subject to approval.

- **Other:** Aircraft safety, potential health risks associated with electro-magnetic fields and shadow-flicker, safety of site personnel (particularly during construction) and road safety were considered to be low.

11.4 Ecologically Sustainable Developments

The proposed additional turbines in the Woodlawn Wind Farm development involve the application of renewable energy technology to the generation of electricity for use by customers of the NEM. The assessment in this supplementary SEE demonstrates that these modifications can be implemented with due consideration to minimising environmental impacts and ensuring that it not only results in a new sustainable energy development but also addresses the broader dimensions of sustainability covering issues such as soil conservation, maintenance of water quality, protection of biodiversity and heritage conservation.

11.4.1 The Precautionary Principle

The Woodlawn Wind Farm and the proposed modification are being developed in response to global concerns about the potential enhanced climate change arising from greenhouse gas emissions. It is an acknowledgment that actions can be taken now to address potential future degradation of the global environment. The local environmental impacts are of a predictable nature and controls will be integrated into the site works to address the identified impacts.

11.4.2 Social Equity and Inter-Generational Equity

A key strength of the utilisation of renewable energy sources is that it acts to reduce demands on fossil fuel resources at the same time as offering net savings in greenhouse gas emissions. Increased use of renewable energy sources is an important step towards reducing the growth in society's consumption of finite fossil fuel resources. While that alone will not ensure the availability of energy resources for future generations it can extend the life of fossil fuel resources and redress a possible imbalance in inter-generational equity relating to energy resources.

The modification to the Woodlawn Wind Farm is a reversible project which does not compromise future decisions relating to the landuse at the site.

11.4.3 Conservation of Biodiversity and Eco-Integrity

The design and implementation of the project takes into account identified ecosystem values and incorporates mitigating measures to minimise its impacts. The proposed modifications to the project will not affect the conservation values of the locality.

In addition, the Federal Government has listed “Anthropogenic Climate Change” as a “Key Threatening Process” under the EPBC Act. The overall Woodlawn Wind Farm is part of a package of measures that aims to reduce the rate of greenhouse gas emissions and accordingly counters a “Key Threatening Process”.

11.4.4 Improved Valuation and Pricing of Resources

The project delivers electricity from a renewable energy source (i.e. it does not deplete a finite energy resource) and has associated emissions that are much lower than other forms of generation that supply the bulk of Australia’s electricity.

The pricing of the electricity produced is a function of the capital and operating costs of the project and the amount of electricity exported into the NEM. The cost of the electricity produced by wind farms is above that of coal sourced electricity and the Australian Government has created mechanisms that recognise the environmental benefits of renewable energy generation and enable renewable energy to compete in the marketplace. In addition, the pricing of electricity generated from fossil fuel resources does not include the full cost externalities arising from that generation.

11.5 Project Benefits

The key benefits of including the additional three turbines into Woodlawn Wind Farm are summarised below:

- It provides an additional source of electricity generation from renewable energy
- It can provide an additional greenhouse gas emission savings of 22,000 tonnes CO_2 / year.
- It assists Woodlawn Wind to fulfil its business objectives
- It assists the Federal Government to achieve the renewable energy targets
- It provides an income to the landowners of properties on which it is located

11.6 Conclusion

The Woodlawn Wind Farm project is a significant environmental initiative and represents an important consolidation of renewable energy generation in NSW. The addition of three turbines will enhance the environmental advantages of the project.

This supplementary SEE has identified and addressed the environmental issues likely to be associated with the proposed modification to the development. Having regard to the material in the foregoing sections and the environmental advantages of the project, it is concluded that the overall environmental impact will be acceptable.