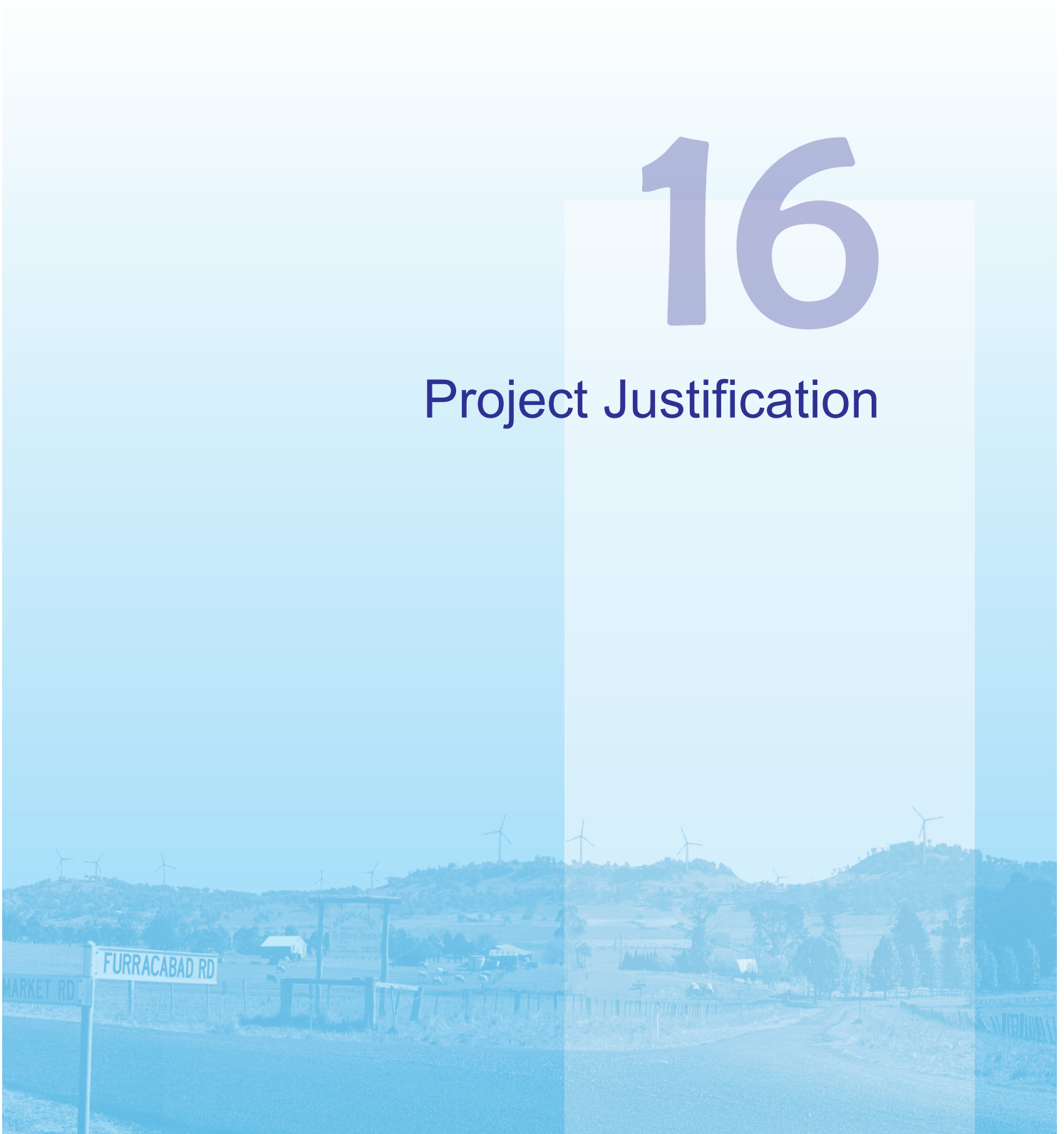


Glen Innes

16

Project Justification



16. Project Justification

This chapter of the Environmental Assessment provides a review of information that provides the basis for justification of the development of the Glen Innes Wind Farm.

16.1 Overview

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

- It utilises renewable energy to produce 54 to 81 megawatts of electrical power when operating at full capacity, dependent on the number of turbines installed and model selected
- It provides additional generating capacity of between 137,000 to 206,000 MWh/year to assist the National Electricity Market (NEM) to be able to meet forecast electricity demands
- It assists the diversification of supply sources by providing additional renewable energy generation
- Where it displaces generation from fossil fuels it helps reduce the carbon intensity of electricity generation and provide savings in greenhouse gas emissions of 130,000 to 195,000 tonnes per year compared to generation by predominantly coal fired plant
- 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 retailers to meet their obligations under the Federal Government's proposed expansion of the Mandatory Renewable Energy Target Scheme (MRET)
- It provides additional income to the landowners on which the wind farm will be located
- It is able to operate compatibly with the existing grazing operations
- It is a commercially viable development that will assist Glen Innes Wind Power to meet its business objectives
- It is likely to provide a small but significant boost to the local economy
- There appears to be general support from the local community for this renewable energy project with some limited opposition from immediate neighbours
- The project complies with the requirements for inter-generational equity

While the project has a range of positive features, impacts that could be considered adverse by some stakeholders include changes to the existing landscape of the wind farm locality and increased traffic on local roads during the construction period. Construction impacts such as increased traffic flows are considered to be manageable and of short term nature. The operational environmental impacts are considered to be outweighed by the positive environmental benefits of the project. Nevertheless, the visual impact of the operating wind farm for some neighbours may be of concern and would only be avoided if the wind farm were not built. The option of not developing this renewable energy project reduces the State of NSW's progress toward an increased level of sustainable energy generation and forgoes a significant 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.

16.2 Additional generation capacity

The project provides additional generating capacity of between 137,000 to 206,000 MWh/yr over a proposed operating life of around 25 years. Its location within the diverse New England Region between the major electrical load centres of Brisbane and Newcastle and close to the northern coast of NSW where the electricity may be consumed is advantageous in that electrical transmission losses will be reduced. Studies by the Australian Greenhouse Office indicate that New

South Wales has considerable ability to integrate additional wind energy generation capacity without adverse effects on the existing electricity network.

16.3 Acceptability of environmental impacts

The project takes account of the biophysical aspects of the environment including flora and fauna, soil, water and air aspects. Comprehensive assessments of relevant issues have been undertaken and are appended to the EA. The design of the project has taken account of the study findings and, where necessary, measures have been proposed to mitigate the potential environmental impacts.

The key environmental aspects addressed in the Environmental Assessment are outlined below:

Greenhouse gas emissions - The project will deliver net savings in greenhouse gas emissions of up to 195,000 tonnes CO₂ per year.

Visual aspects - The project will be visible over a broad area with the visual impact decreasing with distance from the wind farm site. Some neighbours to the wind farm have indicated that they regard the wind farm as an adverse impact and have formed the Glen Innes Landscape Guardians that oppose the development in its current form. Council has also indicated support for a two kilometre setback of wind farms from residences. A two kilometre setback is greater than setbacks that have been applied at many other wind farm sites.

Measures which could mitigate the visual impact of the turbines involve provision of screening by trees at affected residences where no screening is currently available. A range of community members have expressed positive views with regard to this renewable energy project and appear to support the development. 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 project area is spread over approximately 3000 hectares of predominantly cleared agricultural land. Of this area, only a very small percentage is required for placement of the turbines, access tracks and the substation. Existing grazing activities and nearby industrial activity will not be significantly affected by the development.

The proposed development is generally consistent with the zoning objectives of the Severn Local Environment Plan. At the end of their useful life the turbines can be decommissioned and removed from site.

Flora and fauna aspects - The development requires minimal clearing of vegetation and will avoid impacts on areas of sensitive native vegetation or native vegetation with important habitat potential. The construction environmental management plan will include controls to ensure that native vegetation is adequately protected. Impacts on avifauna have been assessed as being very low and in the case of threatened species, not significant.

Noise aspects - The project design has ensured that occupied residences on adjoining lands are at least 950 metres from the closest turbine. A slight exceedance of noise criteria has been predicted for the closest occupied neighbouring residence under worst case conditions. A range of measures are available to Glen Innes Wind Power to ensure that noise criteria are not exceeded during operation. A noise management sub plan will form part of the operational environmental management plan to ensure that the wind farm operation complies with noise criteria. Where necessary, post commissioning compliance testing will be implemented.

Where noise criteria are predicted to be exceeded at wind farmer residences on the properties on which the wind farm is located suitable agreements will be reached with the affected landowners to address the impact.

Soil aspects - The extent of ground surface disturbance affects only a small part of the overall site. Much of the site to be developed is on areas of basalt rock at shallow depth which is unlikely to be subject to erosion. Nevertheless, some areas have less resistant strata and works in these areas will need to be managed to avoid exacerbating erosion. Erosion and sediment controls will be implemented during all earthworks and all temporarily disturbed areas restored on completion of construction works.

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. The main requirement for water supply will be during the construction phase and for the total construction period may be equivalent to one or two days supply to Glen Innes.

Air aspects - The development will result in low project life-cycle air emissions allowing for manufacture, transport, erections and operation of the plant. The emissions from the project will be significantly less than those of fossil fuelled electricity generating stations. The construction earthworks will be managed to minimise airborne dust events.

Aboriginal heritage –An indigenous heritage survey was undertaken for the site in conjunction with representatives of the Glen Innes Local Aboriginal Land Council. The survey covered the full extent of the areas where turbines may potentially be installed and identified only a single site (GIWF 1). No evidence of potential archaeological deposits was found. Subject to the construction being undertaken in accordance with the recommendations of the heritage assessment there will be no significant impact on indigenous heritage values.

Socio-economic - The project will require a modest workforce during the construction stage. It is likely that some services will be drawn from the local area and that some direct or indirect employment opportunities may arise for the local community. The services required during construction are not expected to place undue stress on local resources and will provide a small but significant boost to the local economy. The operational project will provide a worthwhile contribution to the local economy over its lifetime.

Traffic and transport - The construction phase of the project will result in increased traffic to and from the site including over-mass and over-size vehicles. However, with an appropriate Traffic Management Plan prepared in consultation with the local Traffic Management Committee, the works can be undertaken safely and with minimal disruption to local traffic. The proponent will also seek agreement of Glen Innes Severn Council for the inspection and monitoring of the condition of any local roads affected by the construction works. Once operational, the traffic entering the site will be low. Glen Innes Wind Power has consulted with Glen Innes Severn Council and the Roads and Traffic Authority (RTA) and will negotiate the final access arrangements prior to proceeding with the development.

Telecommunications Interference - Potential for interference to the various telecommunications systems in the area has been assessed. There appears to be limited potential for interference to television reception. Should interference be detected following installation of the wind turbines then mitigation options are available and can be applied as required. The proximity of Turbine 7 to the NPWS radio facility on Ross Hill will need to be taken into account during the detail design stage to ensure that the facility is not adversely impacted. The operation of the Telstra Ross Hill facility will be unaffected by the development.

Safety risks and hazards – A Bushfire Management Plan will be prepared to mitigate the risks of bushfires starting as a result of construction, operation, maintenance and decommissioning activities of the wind farm. The Bushfire Management Plan would be prepared in consultation with the NSW Rural Fire Service as part of the Project Environmental Management Plan.

The following further safety issues were considered to present a low or very low risk. Where necessary, measures are incorporated in the Statement of Commitments (Chapter 15) to minimise the identified risks including:

- Aircraft safety
- Potential health risks associated with electric and magnetic fields and shadow-flicker
- Safety of site personnel, particularly during construction
- Road safety

These matters will be dealt with through the Project's Safety Management Plans and Procedures as adopted by the Project contractor.

16.4 Ecologically sustainable developments

The Glen Innes Wind Farm involves the application of renewable energy technology to the generation of electricity for use by customers of the National Electricity Market. In addition, the Environmental Assessment demonstrates that the project 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.

16.4.1 The Precautionary Principle

The Glen Innes Wind Farm is being developed in response to measures developed to address 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 project to address the identified impacts.

16.4.2 Social equity and inter-generational equity

A key strength of the utilisation of renewable energy sources is that such generation 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 the current unsustainable use of fossil fuel energy resources.

As the Glen Innes Wind Farm is a reversible project it does not compromise future decisions relating to the landuse at the site.

16.4.3 Conservation of biodiversity and eco-integrity

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

In addition, the Federal Government has listed '*Anthropogenic Climate Change*' as a '*Key Threatening Process*' under the Environment Protection and Biodiversity Conservation Act. The Glen Innes Wind Farm is part of a package of measures that aim to reduce the rate of greenhouse gas emissions and counter a '*Key Threatening Process*'.

16.4.4 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 National Electricity Market. The cost of the electricity produced by wind farms is above that of coal sourced electricity and the Australian and State Governments have 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 of externalities arising from that generation. In the longer term with further global growth and greater pressure on fossil fuel supplies, prices of electricity from fossil fuels are likely to rise and the competitiveness of renewable energy generation technologies will improve.

16.5 Project benefits

The key benefits of implementing the Glen Innes Wind Farm are summarised below:

- It provides a new source of electricity generation from renewable energy
- It can provide net greenhouse gas emission savings of up to 195,000 tonnes CO₂ / year
- It assists Glen Innes Wind Power's fulfilment of its business objectives
- It assists government achievement of Renewable Energy Targets
- It provides an income to the landowners of properties on which it is located
- It can provide a small but significant economic boost to the local community and provide employment opportunities

16.6 Project justification/conclusion

As a significant New South Wales wind farm development, the project is a worthy environmental initiative and represents an important consolidation of future renewable energy generation capability in New South Wales.

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