

Flyers Creek

WIND FARM

Environmental Assessment

CHAPTER 18 Justification



18. Project Justification

This chapter of the Environmental Assessment provides a review of information that forms the basis for justification of the development of the Flyers Creek Wind Farm. For the purposes of this section, it is again assumed that 44 of the indicative 2.5 MW wind turbines are installed for the project.

18.1 Overview


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

- It enables construction and operation of a 110 MW capacity electricity generation facility utilising a renewable energy source.
- It provides additional electricity generation of approximately 342 GWh/year to assist the National Electricity Market (NEM) to be able to satisfy forecast increased electricity demands. This is enough clean, pollution free electricity to power about 47,000 typical NSW residences.
- It assists the diversification of energy supply sources by providing additional electricity generation from a different fuel source than the majority of NSW's electricity generation (black coal).
- As the wind farm will predominately displace electricity generation from fossil fuels, it reduces greenhouse gas emissions by approximately 305,000 tonnes of CO₂ per year. This amount of greenhouse gas savings is equivalent to removing approximately 70,000 cars from Australia's roads.
- When implemented in accordance with the measures proposed in this document, it does not compromise environmental values at the locality including ecological, heritage, soils or water quality and does not place any material stress on local resources
- It assists retailers to meet their obligations under the Federal Government's RET Scheme which mandates that over 45,000 GWh/year of renewable energy be generated by renewable energy plants by 2020
- It provides additional income to the landowners on which the wind farm will be located
- It is compatible with the existing grazing operations on the wind farm properties and therefore supports the objectives of the Rural Planning Zone.
- It is likely to provide a significant boost to the local economy particularly during the construction phase of the project including employment of local contractors and increased business opportunities for local businesses.
- The project enjoys support from the majority of the local community as well as the mayor of Blayney Shire Council.
- The project contributes to inter-generational equity by reducing greenhouse gas emissions and reducing consumption of finite fossil fuel resources

Therefore, it is clear that the project has a range of positive features and advantages for the environment and the local community.

However, some of the impacts of the project could be considered adverse by some stakeholders including changes to the existing landscape of the wind farm locality, potential increase in noise and increased traffic on local roads during the construction period.

Construction impacts such as increased traffic flows are considered to be manageable and of a short term nature. The potential operational amenity impacts are considered to be outweighed by the definite and positive environmental and economic benefits of the project. Nevertheless, the visual and acoustic impact of the operating wind farm for some neighbours may be of concern and could 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 and economically viable opportunity for abatement of greenhouse gas emissions.

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

18.2 Additional generation capacity

The project provides additional generating capacity of approximately 342 GWh every year over the operating life of the wind farm. The project is located within Central Western NSW, south of the regional centre of Orange and Cadia Mine both of which have substantial electricity demands. The Flyers Creek wind farm's location is advantageous, as the project will result in significantly reduced electrical transmission losses.

18.3 Acceptability of environmental and amenity 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 included in this Environmental Assessment. The design of the project has taken account of the technical and environmental study findings and, where practical, measures have been proposed to mitigate the potential environmental and amenity 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 305,000 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. The wind farm layout has setbacks of at least one kilometre for all neighbouring residences. Adjustments to the array were also undertaken following community information days, to remove two turbines at the northern part of the wind farm site. While both sites had superior wind energy potential, the proponent has responded to concerns of several neighbours by removing Turbines 1 and 2. Turbine 31 was also relocated to the other side of the top of a hill following the suggestion of one of the neighbours to the project.

Other measures which could mitigate the visual impact of the turbines involve provision of screening by trees at affected residences where little or no screening is currently available. A range of community members have expressed positive views with regard to this renewable energy project and 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 and reduce concerns regarding visibility of the wind turbines.

- **Land use** – The project area is spread over approximately 6,000 hectares of mostly cleared pastoral land with low density rural residential development. Of this area, only a very small percentage is required for placement of the turbines, access tracks and the substation. Existing grazing activities will not be significantly affected by the development.

The proposed development is consistent with the zoning objectives of the Blayney Shire Local Environment Plan. At the end of their useful life the turbines will be decommissioned and removed from the project 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 low and in the case of threatened species, not significant.

- **Noise aspects** – The project design has ensured that turbine sites are at least one kilometre from occupied residences on adjoining lands. A comprehensive and sophisticated noise assessment has shown that the wind farm can be operated to comply with relevant noise criteria for adjoining residences. A range of measures are available to Flyers Creek Wind Farm to ensure that noise criteria are not exceeded during operation. A noise management sub plan will form part of the Operational Environmental Management Plan (OEMP) to ensure that the wind farm operation complies with NSW's noise criteria, which is the most stringent in Australia. Post commissioning compliance testing will be conducted per the noise management plan to assure noise levels are below the mandated noise levels at neighbouring residences.
- **Soil aspects** – The extent of ground surface disturbance affects only a small part of the overall site. The turbines and substation will be located in the Vittoria-Blayney and Panuara soil landscapes which have a low to moderate potential for erosion. Observations of slopes in these areas indicate good stability and resistance to erosion and construction will involve limited disturbance of the slopes. Comprehensive controls will be applied during construction to minimise any potential for erosion and all temporarily disturbed areas restored on completion of construction works.
- **Water aspects** – There will be no off-site discharges. Water will be required for construction particularly for dust control and site restoration and to a lesser extent for domestic uses by site staff. Once operational, water will be provided to the proposed facilities building from a storage tank that will collect roof drainage. 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 development will result in extremely low project life-cycle CO₂ emissions allowing for manufacture, transport, erections and operation of the plant. The greenhouse gas emissions from the project will be negligible compared to 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 consultation with representatives of the Orange Local Aboriginal Land Council (OLALC), Wiradjuri Traditional Owners Central West Corporation (WTOCWC), and 12 individual Aboriginal stakeholders. The survey covered the full extent of the areas where turbines may potentially be installed. Several areas of potential heritage significance were identified and measures and procedures will be put in place which are very likely to avoid any disturbance. In the unlikely event that adjustments to the project layout cannot preclude disturbance, salvage of the artefacts in accordance with relevant approvals and consultation will be undertaken. Construction undertaken in accordance with the recommendations of the heritage assessment and a Cultural Heritage Management Plan is not expected to result in any significant impact on indigenous heritage values.
- **Socio-economic** – The project will require a modest workforce during the construction stage. It is envisioned that many services will be drawn from the local area and that significant direct and indirect employment opportunities will arise for the local community. The proponent will continue to liaise with the local Industry Capability Network to facilitate this effort. The services required during construction are not expected to place undue stress on local resources and will provide a significant boost to the local economy. Operation of the project will also 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. An appropriate Traffic Management Plan, will form part of the Construction Environmental Management Plan (CEMP). It will be prepared in consultation with the Roads and Traffic Authority (RTA) and Blayney Shire Council. This plan will ensure that the works can be undertaken safely and with minimal disruption to local traffic. The proponent will also seek agreement of Blayney Shire for the inspection and monitoring of the condition of any local roads affected by the construction works. Once operational, the traffic entering the wind farm site will be low.

- **Telecommunications Interference** – Potential for interference to the various telecommunications systems in the area has been assessed by a relevant specialist. Where there was a potential indicated for interference to point to point telecommunications services, adjustments to the wind farm array were made to provide more than sufficient setbacks from the telecommunication link paths thereby eliminating the potential for any interference. There is a low potential for interference to television reception, and should such interference be detected following installation of the wind turbines, simple mitigation options are available and will be applied as required.
- **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 OEMP.

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 19) 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.

18.4 Ecologically sustainable developments

The Flyers Creek Wind Farm involves the application of renewable energy technology to the generation of electricity for use by electricity customers within 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.

18.4.1 The Precautionary Principle

The Flyers Creek 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 acknowledged that actions taken now can 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 potential impacts.

18.4.2 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.

It is also worth noting that the Flyers Creek Wind Farm is essentially a "reversible" type of development project that will not significantly affect future decisions relating to land use after the wind farm is decommissioned. Once the wind turbines are removed and the land is re-sown to pasture, it will be very difficult to discern that a wind farm was ever operating at the site.

18.4.3 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 impacts. The project will not significantly affect the conservation values of the locality. Comprehensive flora and fauna surveys have demonstrated very low utilisation of the site by threatened species; therefore, the wind energy project is very unlikely to have an ecologically significant impact on these species.

In addition, the Federal Government has listed 'Anthropogenic Climate Change' as a 'Key Threatening Process' under the Environment Protection and Biodiversity Conservation Act. The Flyers Creek 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'.

18.4.4 Improved valuation and pricing of resources

The project generates electricity from a renewable energy source thereby reducing the depletion of finite fossil fuel energy resources.

The cost of the electricity produced is a function of the capital and operating costs of the project and the amount of electricity generated for the National Electricity Market. The cost of the electricity produced by wind farms is nominally higher than electricity generated from burning coal. However, the pricing of electricity generated from fossil fuel resources does not include the full cost of externalities arising from that generation including particulate air pollution and greenhouse gas emissions. Continued economic growth, greater pressure on fossil fuel supplies, and/or application of a price on carbon are likely to cause the cost of electricity from fossil fuels to rise resulting in the competitiveness of renewable energy generation technologies improving.

18.5 Project benefits

The key benefits of the construction and operation of the Flyers Creek 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 305,000 tonnes CO₂/year
- It assists achievement of the Federal Government's mandatory Renewable Energy Target Scheme which is to deliver over 45,000 GWh/year of renewable energy by 2020
- It provides income to the landowners of properties on which it is located effectively 'drought-proofing' their farms
- It will provide a significant economic boost to the local community and provide employment opportunities particularly during the construction phase

18.6 Project justification/conclusion

As a significant New South Wales wind farm development, the project is a worthy environmental initiative and represents an important contribution to future renewable energy generation capability in New South Wales. The Flyers Creek Wind Farm has been declared to be a 'Critical Infrastructure' project in recognition of the strategic importance of such projects.

This Environmental Assessment has identified and addressed the environmental issues 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 and the project is justified.