Flyers Creek Wind Farm Pty Ltd

Flyers Creek WIND FARM

Environmental Assessment

CHAPTER 17
Cumulative Impacts

17. Cumulative Impacts

This chapter of the Environmental Assessment discusses the potential cumulative impacts of wind farm development within the locality and any potential for cumulative impacts associated with the Flyers Creek Wind Farm development.

17.1 Introduction

The Department of Planning's Guideline for wind energy facilities states that: *"Cumulative impacts may result from a number of activities with similar impacts interacting with the environment in a region. They may also be caused by the synergistic and antagonistic effects of different individual impacts interacting with each other and may be due to temporal or spatial characteristics of the activities' impacts."*

The review of the cumulative impact of the wind farm has several dimensions:

- The impact of the wind farm, when added to the combined impacts of all other existing developments and environmental characteristics of the area. Such impacts have generally been addressed in other parts of the Environmental Assessment by reference to the existing environment and assessment of potential impacts relative to the baseline.

- The impact of this development in the context of the existing wind farms in the Central Western Region (Blayney Wind Farm) and the likely growth of wind energy developments throughout Australia, in particular, in relation to further wind farm developments in NSW.

- The impact of developments, which are ancillary to, or otherwise associated with, the proposed wind farm. Such developments can include the development of transmission infrastructure.

17.2 Wind farm developments in the Central Western and Southern Tablelands

Figure 1.1 shows operating wind farms for the Central Western and Southern Tablelands regions of NSW. The Flyers Creek Wind Farm project area is about eight kilometres to the north-west of the existing Blayney Wind Farm that is owned and operated by Eraring Energy. Blayney Wind Farm comprises fifteen Vestas 660 kW wind turbines and has a total generating capacity of 10 MW.

Other wind farm developments in the Central Western and Southern Tablelands include Hampton Wind Farm comprising two 600kW turbines, Crookwell Wind Farm comprising eight 600 kW turbines (4.8 MW), Capital Wind Farm located near Tarago in the Southern Tablelands comprising 67 by 2.1 MW turbines (140 MW) and Cullerin Wind Farm near Gunning comprising 15 by 2 MW turbines (30 MW). Construction of the Woodlawn Wind Farm, adjacent to the existing Capital Wind Farm, has also commenced and will add 23 by 2.1 MW turbines (48.3 MW). However, these wind farms are all distant from the Flyers Creek Wind Farm project and issues of cumulative impact are therefore not applicable.

A number of other organisations are also investigating other sites in NSW for their suitability as wind farm sites. To assist the development of renewable energy projects, the NSW government initially published an atlas of wind resources for NSW that provides guidance on areas that may be suitable for wind farm development and subsequently identified Renewable Energy precincts. A number of project approvals have been granted for wind farms at other locations within NSW and over time it is expected that there will be more wind farms developed throughout NSW.

The proposed Flyers Creek Wind Farm development will be located at a site, which is cleared pastoral land with low-density rural residential development. The land immediately around the site is less suitable for wind farm development. Several adjacent areas that would be suitable in terms of wind resource potential are close to rural residences, and therefore would not be suitable for a wind farm. These factors and access to other suitable land with adequate wind energy resources constrain the extent of the Flyers Creek Wind Farm site.

While there is a likelihood of future development of wind farms in NSW, such developments are limited to sites that have a suitable wind energy resource and satisfy a range of environmental, social and infrastructure requirements as well as having landowners that will agree to the use of their land for a wind farm facility. Suitable sites must be elevated and on cleared land with potential for grid connection at close distance. When all these factors are considered, the potential for sites within the vicinity of the Flyers Creek wind farm project being suitable for wind farm development is unlikely. This is confirmed by the fact that there are no known proposed wind farm developments within at least 30 kilometres of the Flyers Creek Wind Farm project.

17.3 Cumulative effects of wind farms in the region

The Blayney Wind Farm comprises fifteen Vestas 660 kilowatt wind turbines and has a total generating capacity of 10 MW. The site is connected via an 11 kV/66 kV substation to a 66 kV Country Energy transmission line. It began operating in 2000. As previously discussed, the Blayney Wind Farm is the only wind farm close enough to the Flyers Creek project to have a cumulative impact.

The main cumulative impact of multiple wind farm developments is usually related to the combined visual impact of the wind farms at locations where more than one wind farm is visible. Cumulative acoustic impact would only be a material issue if residences were located within about three kilometres of turbines from both projects. As the closest turbines for the two wind farms are eight kilometres apart there are no residences for which this is the case and the cumulative acoustic impact of the Blayney wind farm is not an issue.

The Blayney Wind Farm is visible from some parts of the Flyers Creek Wind Farm site but views to Blayney Wind Farm are limited by topography and/or vegetation from many locations in the vicinity of the Flyers Creek Wind Farm site. As the two wind farms are separated by a distance of eight kilometres at the closest point, intermediate viewpoints will generally be towards one or the other wind farms rather than towards both wind farms at the same time. Some elevated locations around Forest Reefs may have views that include both Blayney and Flyers Creek Wind Farms, but the Blayney Wind Farm is about 20 kilometres from Forest Reefs. Locations within Blayney will have no views to either wind farm. While small areas of Carcoar may have limited views of one, or even both, wind farms, the views to both wind farms would be in different viewing directions, thereby limiting the cumulative visual impact. Of the eight photomontages prepared for the Flyers Creek Wind Farm none show the Blayney Wind Farm in the background.

The cumulative avifauna impact of the Flyers Creek and Blayney wind farms is not expected to be significant due to the low level of avifauna impact observed at the Blayney Wind Farm following its commissioning. No bird or bat carcasses were found during the post commissioning surveys at the Blayney Wind Farm. In addition, the very low utilisation of the Flyers Creek Wind Farm site by threatened bird and bat species also contributes to a negligible cumulative impact. The specialist assessments of aspects such as flora and fauna have been undertaken within the broader regional context as reported in the Appendices to this Environmental Assessment.

Other potential environmental impacts such as heritage issues, vegetation clearing and interference to television reception are predominately site specific, and with the incorporation of mitigation measures identified in this Environmental Assessment, the cumulative impact of the separate wind farms on these issues is considered to be negligible.

The wind farm development is in a sparsely settled area where the cumulative impact of all developments will be within the capacity of the locality to absorb it without detrimental social, environmental or economic consequences.

17.4 Other industry in the area

The Cadia Mine, owned and operated by Newcrest Mining Ltd, is located about eight kilometres north-west of the Flyers Creek Wind Farm project. It commenced operating in 1998 and produces significant quantities of gold and copper ore. The Cadia East underground development obtained Planning Approval in January 2010 and construction works commenced later that year. First production for Cadia East is expected in the second half of 2012. The mine effectively operates 24 hours per day and is a visible feature from some areas of the area within, and near, the Flyers Creek project. As the activities of the mine and the wind farm are so different, it is considered that the Flyers Creek project has a negligible cumulative impact in conjunction with Cadia Mine's activities.

Other developments in the broader locality include rural activities, small scale mining and expansion of residential settlements in some areas of Blayney Shire. The cumulative impact of the wind farm with these activities is considered to be very minor.

17.5 Long term cumulative impacts

Significant environmental impact has occurred in the vicinity of the site over the last 170 years due to the clearing of native vegetation for grazing and subsequent settlement with its various cultural features. The development of the wind farm will result in some further change to the character of the landscape at the locality but will otherwise have little further impact on the environment at this location. While some neighbours would argue that the wind farm represents a change to the landscape, it may also limit the proliferation of small acre "lifestyle" farms and rural residences, discouraged by local and state planning policies, which would also substantially permanently change the character of the rural environment.

It is worth noting that a wind farm development is a "reversible" development. All above ground equipment is removed at the end of its useful life, and the site restored to a condition essentially identical to that before the wind farm was constructed. Therefore, the long term cumulative impact of a wind farm is much less than many other developments.

17.6 Short term cumulative impacts

Short-term cumulative effects are mainly related to transport of equipment and materials to the site. Any cumulative traffic issues with other developments and activities at the time will be managed through the Traffic Management Plans which form part of the construction and operational environmental management plans in consultation with Blayney Shire Council.

17.7 Transmission line infrastructure

There are no existing high voltage lattice tower transmission lines in the vicinity of the Flyers Creek wind farm project. The only high voltage line in the area is the existing 132 kV power line on single concrete poles between Orange and the Cadia mine. The proposed 132 kV line from the wind farm is proposed to connect to this line; however, both 132 kV lines will likely only be visible from areas within the Cadia mine site. The cumulative visual impact of the Flyers Creek Wind Farm 132 kV transmission line on local residents will therefore be negligible.

An additional 33 kV transmission line will be located on the wind farm properties as part of the wind farm electrical collections system. This is a lesser structure than the 132 kV transmission line and its route has been kept to the middle of the wind farm site where it is more distant from neighbouring public roads and residences resulting in very low cumulative impact.