



Our Ref: SP419965
Your Ref: PL-SP/05/0283

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21 October 2005

Ms Diana Michetti
Panels Victoria
Nauru House
Level 11, 80 Collins Street
MELBOURNE VIC 3000

Dear Ms Michetti

Planning Permit Application: PL-SP/05/0283
Proposal: 116 Wind Generators & Associated Infrastructure
Address: Various allotments, Macarthur, Moyne Shire

I refer to the above application received on 24 August 2005.

The Department of Sustainability and Environment (DSE) has considered and evaluated the above application pursuant to *Section 52* of the *Planning and Environment Act 1987*. DSE offers the following response to the above proposal.

These comments are submitted without prejudice to the consideration of this matter by the Minister for Planning under the *Planning and Environment Act 1987*.

1. Policy Context

The *Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria* requires all proponents of wind energy projects in Victoria to have regard to the protection of areas or species listed under the *Flora and Fauna Guarantee Act 1988* (FFG) and *Environment Protection and Biodiversity Conservation Act 1995* (EPBC).

2. Background to Consideration of PL-SP/05/0283

A preliminary planning site meeting was held between the Proponent and the Department on 18th October 2004, at which time Department offices advised the Proponent that the proposed wind farm may impact on a number of matters of significance, being:

- Tussock Grassland Communities
- Rocky outcrop environments
- Shaw River ephemeral wetlands
- Seasonal wetlands
- Striped Legless Lizard (*Delma impar*)(listed as Endangered under the FFG and Vulnerable under the EPBC)
- Fat-tailed Dunnart (*Sminthopsis crassicaudata*)
- Brolga (*Grus rubicunda*) (listed as Vulnerable under the FFG)
- Curly Sedge (*Carex tasmanica*)(listed as Vulnerable under the FFG and EPBC)

The Department has had further meetings with the proponent on 23rd February 2005 and 1st April 2005 to discuss biodiversity monitoring and the issue of monitoring of bats and the potential impacts on the Southern Bent-wing Bat (*Miniopterus schreibersii* southern form listed under the FFG and the EPBC) in particular. At these meetings the Department stated that it was concerned with the lack of survey information of bat monitoring at the proposed wind farm, particularly at "rotor-swept" height and suggested further survey options to gain more information on bat populations.

On the 24th August 2005 the Department received notice inviting it to comment, pursuant to Section 52 of the *Planning and Environment Act* 1987, on an application for a planning permit for the use and development of a wind energy facility near Macarthur.

On the 23rd September 2005, the Department again met with the proponent to review the survey results and discuss its concerns about the potential impact on the Southern Bent-wing Bat along with new emerging information about the presence of Brolga on and near the site.

On the 6th October 2005 Brett Lane & Associates and DSE Biodiversity staff undertook field investigations of reports of Brolga nest sites within ten kilometres of the proposed wind farm site. These field investigations identified four previously unknown breeding sites.

On review, DSE has identified the following matters in assessing the impacts of this proposal on the environment.

3. Potential Impacts on Brolga

The Brolga is listed as Vulnerable on the *DSE Victorian Threatened Species Advisory List* and under the *Flora and Fauna Guarantee Act* 1988. The Victorian population of Brolga has declined significantly since European settlement and the current population is estimated at between 600 - 650 birds in the south west Victoria/south-east South Australia region, with an estimated additional 100 birds in NE Victoria. Brolgas are non-migratory, however, they do move seasonally between traditional flocking and breeding sites and in response to seasonal rains and droughts. Apparent trends show the Victorian Brolga population becoming increasingly dispersed and fragmented due to the decline in optimal habitats. Collisions with overhead power lines are well known in SW Victoria. While recruitment does occur, the population has remained static for sometime. It is widely considered that the Victorian population is under stress.

The bird surveys as carried out for in the targeted flora and fauna investigations by Brett Lane & Associates Pty Ltd in Supplement C – The Status of the Brolga in the Macarthur Region, page 14, state that a total of 66 Brolgas were recorded within a 40 kilometre radius, with 14 breeding birds being located on near by swamps (reported from landholders).

The Department advises that since the development of the Planning Permit Application, further information has become available about the Brolga utilisation in the vicinity of the proposed wind farm site. Landholders and fieldwork have provided this by Departmental Officers & by Brett Lane & Associates Pty Ltd during the breeding season of the Brolga (July to December).

DSE considers that the proposal poses a higher risk to Brolga through both loss of habitat for Brolga (through deterring use of the available habitat) and an increased risk of death and injury through collision with the turbines than indicated by the work provided in support of the Planning Permit Application. While the impact of the presence of the turbines on Brolga behaviour, feeding and breeding activity has not been determined, it is likely that in the short term, the presence of turning turbines will dissuade birds from wind farm sites.



There is no comprehensive data on the movement patterns of Brolgas overall or for particular locations or groups of birds. The Department has previously conducted banding programs whereby birds are tagged with a band and banded birds are tracked over time. These studies have, however, resulted in mortalities and injuries due to bands not being suitable for the male birds and have been discontinued. Technology exists to enable the satellite tracking of birds to ascertain movement patterns however these methods are extremely costly and more importantly, the trapping and handling the birds poses the risks of bird injury and death. The Department acknowledges there is a high degree of uncertainty associated with any estimate of risk due to a distinct lack of information relating to Brolga movement and behaviour.

3.1 Flocking sites in relation to Macarthur

A major flocking site for the Brolga is at the Stavely / Willaura area, being in the top two flocking sites in Victoria. It is located 50 kilometres north west of the proposed wind farm site. Other significant sites are at Blackwood Lake, which is located 25 kilometres to the north east of the proposed wind farm, and the Lake Linlithgow area about 30 km north of the proposed wind farm site. The above sites are within 50 kilometres (a short flying distance for Brolgas) of the proposed wind farm site and constitute 30% (200 birds) of the Brolga population for SW Victoria. No flocking sites are known for the wind farm site or its immediate surrounds. It is not known how many birds occurring at local flocking sites may interact with the proposed wind farm.

3.2 Breeding sites in relation to Macarthur Wind Farm

The main breeding areas for Brolgas in relation to this site are located approximately 20 kilometres to the south west of the wind farm, between Orford and Heywood. On the 6th October 2005 Brett Lane & Associates and a Department Biodiversity staff member undertook field investigations of reports of Brolga nest sites within ten kilometres of the proposed wind farm site. The field trip identified four new nesting sites, one of which had a breeding pair and three that had been used in previous years. This information was not captured in the planning permit application.

It is anticipated that in a normal to wet season, utilisation of the area around the proposed wind farm by Brolgas could increase. Anecdotal evidence has suggested that a number of breeding sites may be located within the wind farm site, and this has been confirmed by the planning permit application (supplement C – The Status of the Brolga in the Macarthur Region, page 20, Brandon property) “Reported seeing Brolga late winter / early spring, and had two on the property last year (2003)”. The Department is currently investigating these reports to further determine utilisation of the wind farm site by Brolgas.

3.3 Movement between flocking site and breeding sites

Brolgas regularly move between flocking and breeding sites. The proposed Macarthur Wind Farm site is located between the alignment of major flocking sites (Blackwood Lake, Stavely / Willaura, Lake Linlithgow) and the known breeding area of Orford to Heywood. The Department does not hold information, nor has it conducted studies on the movement patterns of Brolga either within or between breeding and flocking sites. The fact that Brolgas may choose, or be forced due to extraneous circumstances, to forage and breed in non-definable (at times sub-optimal) habitats, further complicates the prediction of flight paths.

3.4 Recruitment in the Macarthur area

In the last ten years and up to 2005, no new breeding pairs have been added to the known breeding populations (at known breeding sites). The nest site discovered near Penshurst on 6th October appears to be occupied by a young pair. The population may undertake a significant



population decline if no new breeding pairs are available to replace the current breeding population.

The Department has only limited information on the recruitment into the regional population by breeding pairs from the Macarthur area. It is conceivable that certain breeding sites or birds may be of higher value to recruitment than others within the region. Such 'value' would be influenced by varying factors such as the demographics of the local Brolga population; the health of wetlands; the experience of adult birds in raising young; the presence of fences which limit chick movement and in some cases cause chick mortality; the absence or presence of predators such as foxes and paddock size which in turn affects foraging range. It is therefore difficult to predict the impact of changes in use patterns or loss of adult birds to local recruitment that might arise from the proposed wind farm.

3.5 Impact Assessment

Brett Lane & Associates have concluded that the birds likely to be impacted on by the proposed development represent a small proportion of the total numbers of Brolga in the south-west Victoria, with the less frequent seasonal flight movement between flocking and or breeding sites, and a low likelihood of movement between roosting and breeding site near the wind farm. There is very little historical Brolga survey work from which to draw any long-term conclusions on Brolga utilisation of the wind farm area. It is noted that the 2005 flocking season (November 2004 – April 2005), was a dry season, and this may have had an impact on the Brolga occurrences in the area.

It is the Department's view while that the proposals will most likely have an impact on the local Brolga populations, the Department does not have sufficient information to assess the risk to the SW Victorian population.

The current estimate of maximum impact (if all birds present from time to time within 20 km of the wind farms are killed) is < 3% of the SW Victorian population. It is noted that at least 30% of the SW Victorian population is known to flock within 50 km of the Macarthur site.

3.6 Impact Mitigation

DSE supports the need for a targeted and long term monitoring program to increase the understanding of Brolga movements and behaviour in relation to the wind farm site. The collection of new data will, however, be hampered by the prevailing dry conditions and meaningful data collection would need to be done over a number of years.

Active conservation measures conducted away from the wind farm sites could arguably result in enhanced recruitment levels that offset elevated loss rates. Such measures will include predator control, protection of existing habitat and creation of new habitat away from the wind farm site. Securing optimum habitat on private land may be difficult, as will creating new wetlands if drought conditions persist. While habitat augmentation is supported, its success cannot be guaranteed. Brolgas display a high degree of site fidelity and it could not be guaranteed that new wetlands would attract breeding pairs. The details of such monitoring and conservation measures need to be explored further.

3.7 Cumulative Impact

The Department is of the view that cumulative impacts on the regional Brolga population from multiple wind farms, although difficult to quantify, should be considered. It is advisable that, given the apparent stress the population is already under, potential impacts from any individual wind farm should be assessed within the context of cumulative impacts from other wind farms. While the risk

posed by the current proposal may be proved to be acceptable, future wind farms within the known range of the Brolga in SW Victoria are likely to add to that risk.

DSE recommends that any consideration of these proposals in respect to potential impacts on Brolga have regard to the Precautionary Principle. The precautionary principle states that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

4. Potential Impacts on Southern Bent-wing Bat

The Southern Bent-wing Bat is known to move out of the maternal caves late summer every year and move back in the maternal cave in early spring to rear young. The Bat is known to migrate and travel between the maternal caves at Naracoorte and Warrnambool. The Department is unclear of the route taken by the Southern Bent-wing Bats or the height that the individuals fly at during these migrations.

Locally within a twenty-five-kilometre radius of the proposed wind farm there are a number of wintering caves used by Southern Bent-wing Bats. These caves are located, at Mount Napier, Mount Eccles, Byaduk Caves and presumably in unsurveyed caves located on private land and associated with the Basalt lava flow formation. It has been noted that the Byaduk and Mount Eccles bat population increases during winter, but currently the Department is uncertain of the population size at these wintering caves and the migratory routes that the Southern Bent-wing Bats take to the maternal caves at Naracoorte and Warrnambool.

There is no consistently gathered, accurate data on the scale and range of movements of the Southern Bent-wing Bat in relation to the proposed wind farm site. The Department is unable to provide definitive advice regarding movement patterns of Bats through the proposed wind farm site nor the number of bats likely to be impacted by this proposal.

The Department is of the view that the proposal may directly impact on the Southern Bent-wing Bat population as it will increase the likelihood of bats being killed or injured as a consequence of collision with a turbine during flight for migration.

The fauna surveys carried out in the targeted flora and fauna investigations by Brett Lane & Associates Pty Ltd state that 160 identifiable calls recorded within the project area included the Southern Bent-wing Bat and six other species. Brett Lane & Associates have assessed the impact of this proposal as being low due to the low number of bat calls and conclude that it would seem unlikely that the proposal wind farm would impact upon bat populations in the local area and region.

The Department has raised its concerns regarding the lack of survey information of bat monitoring at the proposed wind farm, particularly at rotor swept height, with the proponent and suggested further survey options to gain more information on bat populations. These proposals of further surveys involved the development of new survey techniques to obtain survey information at rotor swept height. The proponent was of the opinion that they had enough survey information on bats and did not trial any further bat survey work at this height.

The Department is of the view that further survey work is justified to gather the data needed to ascertain an understanding of Southern Bent-wing bat movement across the site.

5. Requirements for an Environment Management Plan

DSE is of the view that should the application be approved, then provision should be made for the following to be addressed in the project Environmental Management Plan:

1. A targeted bird and bat monitoring program, with a specific component for longer term local and offsite Brolga monitoring and behavioural research.
2. Conservation measures to aid recruitment to the regional Brolga population. Such measures should include regional predator control and habitat augmentation.
3. A Native Vegetation Management Plan is prepared to provide for the required site rehabilitation / native vegetation offsets as determined for any losses through the net gain assessment.
4. Works implementation to be timed to avoid or minimise disturbance to breeding wildlife within or adjacent to the project site.

6. Conclusion

The Department would like to emphasise the uncertainty that surrounds the information available in respect to Brolga numbers and behaviour and Southern Bent-wing Bat movements in the vicinity of the proposed wind farm site.

The impacts of the proposed wind farm on the Brolga population are potentially significant. The absence of information on bat movements makes assessment of the impacts and prediction of the risks difficult. Any consideration of this proposal in respect to potential impacts on biodiversity values should have regard to both the Precautionary Principle, and the overall merits of the development.

The collection of additional data and long term monitoring is supported. A significant difficulty with monitoring for projects of this nature are, however, that if it is conducted once the turbines are in operation and the results indicate a higher than predicted impact, the options for addressing that impact are conceivably very limited.

Active conservation measures conducted away from the wind farm sites could arguably result in enhanced recruitment levels that offset elevated loss rates, but the success cannot be guaranteed.

It is also appropriate to consider the cumulative impact of multiple wind farms on regional biodiversity, although it is acknowledged that again is difficult to quantify.

If you have any queries relating to this matter, please contact Mr Andrew Gosden at the Department's Warrnambool Office on telephone 03 5561 9956.

Yours sincerely

IAN VOIGT
Regional Director
South West

