

OFFICER REPORT – CHEPSTOWE WIND FARM

INTRODUCTION

In February 2010 Future Energy Pty Ltd submitted a planning permit application to Pyrenees Shire Council for a three turbine (and associated works) wind farm adjacent to Chepstowe - Pittong Road, between Skipton and Snake Valley.

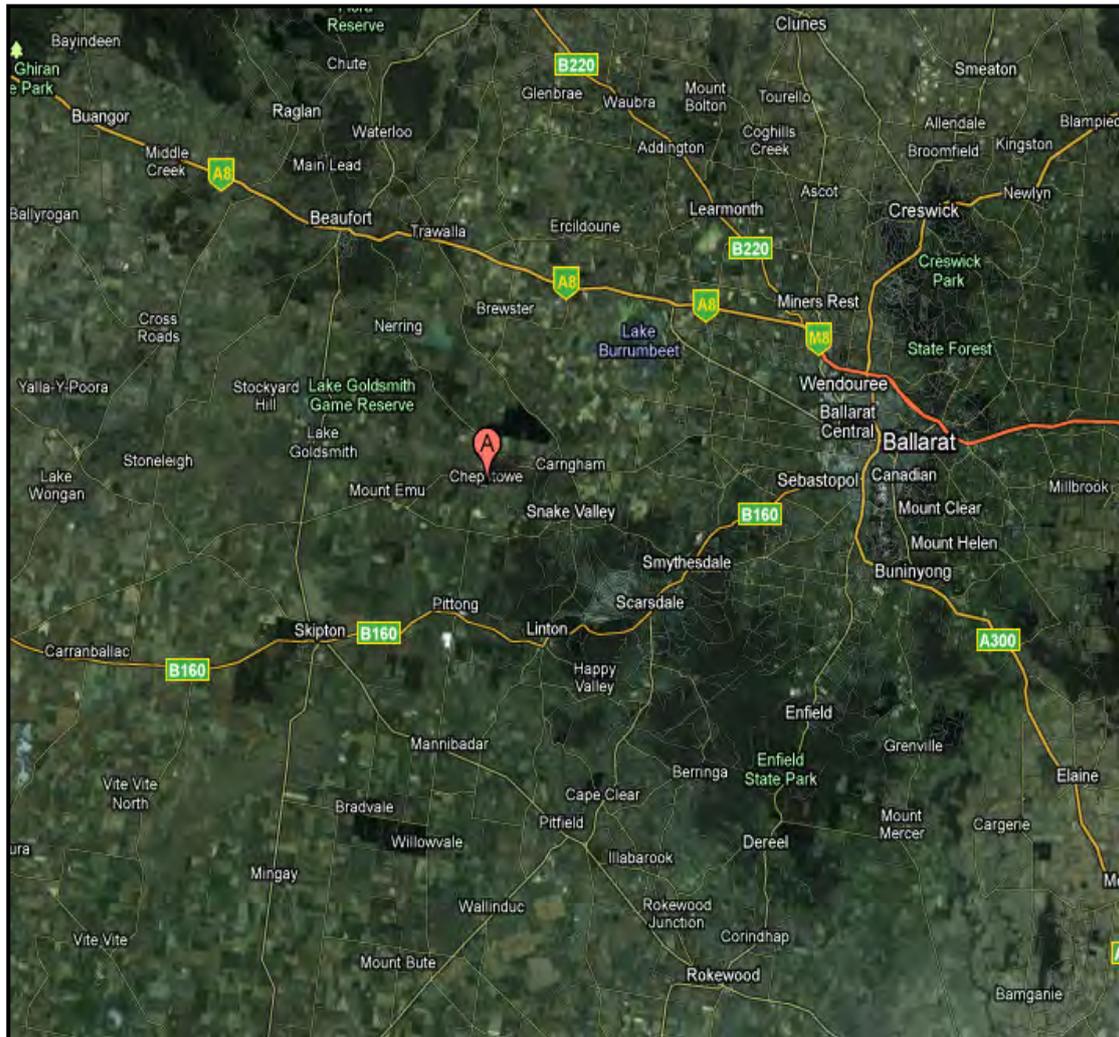


Figure 1. Map of Chepstowe and surrounding areas

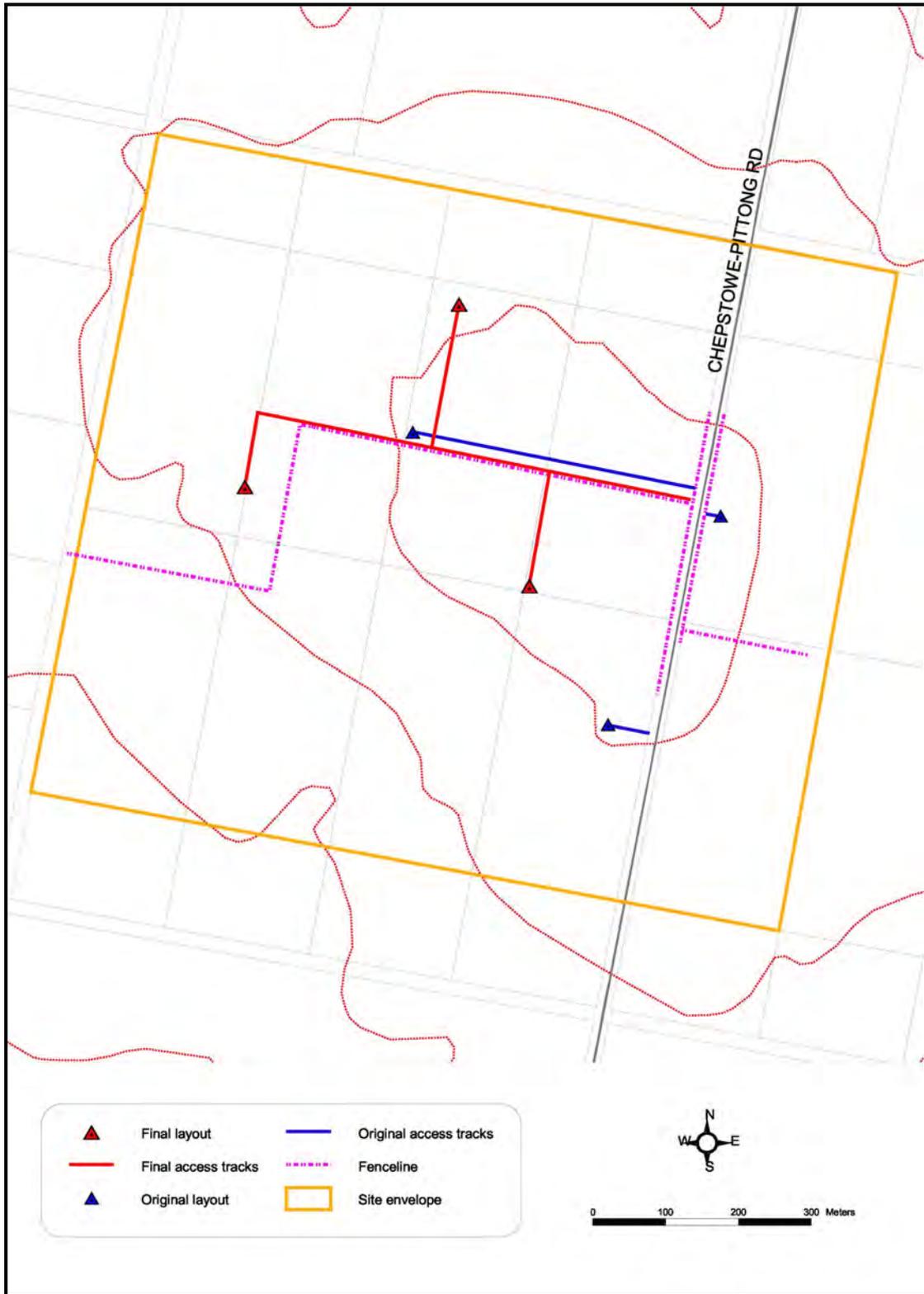


Figure 2. Location of Proposed Turbines

Following a failure to determine the application within 60 days the applicant sought a review by appealing the matter to the Victorian Civil and Administrative Tribunal (VCAT). A total of 26 submitters became parties to the appeal, with their main grounds for objection being related to visual amenity, noise effects and impact on Brolga habitat. A three day hearing was set by VCAT to commence 14 February 2011.

On 2 February 2011, the Minister for Planning wrote to VCAT advising he had formed the view that the proceeding raised a major issue of policy and that its determination may have a substantial effect on the achievement or development of planning policy objectives. The Minister called in the application under clause 58(2)(a) of Schedule 1 of the *Victorian Civil and Administrative Tribunal Act 1998* and authorised senior officers of the Department of Planning and Community Development (DPCD) to hear and consider submissions from the parties on his behalf.

On 21 February 2011, an inspection of the land and its surrounds was carried out by the authorised DPCD officers, Ms Jane Monk, Director State Planning Services and Mr Jack Krohn, Principal Environment Assessment Officer. Mr Mark Keane, Senior Planner with DPCD's Priority Projects team and Mr Bart Gane, State Coordinator, Wind Farm Facilities were also present at the site inspection.

On 22 and 23 February 2011 a meeting was convened by Ms Monk and Mr Krohn to hear from the parties to the application for review, on behalf of the Minister. Mr Keane, as case manager for the call-in, was also present.

A number of parties to the proceeding and other interested people were present over the two days with the majority of these parties presenting their submissions on the first day. Four experts were engaged by the permit applicants, their written advice was circulated to all parties prior to the meeting. These experts were made available during the meeting to explain their advice and answer questions. The tables below list the parties and experts who attending the meeting.

<b>Parties attending the meeting</b>	<b>Position/Interest</b>	<b>Representing (if not themselves)</b>
Mr Matthew Townsend	Barrister	The applicant
Mr Chris Hall	Planning Officer	Pyrenees Shire Council
Mr Stephen Foster	Senior Officer	Country Fire Authority (CFA)
Mr Stewart Dekker & Mr Richard Hill	Senior Officers	Department of Sustainability and Environment
Mr Graeme Shields	Resident of the rural living zoned land approx 2.5 km to the east of the site.	
Mr Andrew Gabb & Mrs Patrica Gabb	Former residents of the same rural living area	
Ms Renate Metzger	Resident of Smeaton approximately 32 km north of Ballarat	
Ms Jenny Bruty	Resident living approximately 2.2 km from the site – With land abutting the site.	

**Table 1. Parties Attending Meeting**

<b>Representative/Witness called by Ms Bruty</b>		<b>Interest</b>
Mr Peter Mitchell	Engineer and member of Waubra Foundation	Opposed the Stockyard Hill Wind Farm and applies same reasons to oppose the Chepstowe Wind Farm
Mr Noel Dean	Lives approximately 1740 metres from the nearest turbine of the Waubra Wind Farm	Witness to negative effects of Wind Farms on his and his family's health.
Ms Tania Kehoe	Neighbouring resident	Witness to issues affecting landowners in Chepstowe Stockyard Hill area
Dr Sarah Laurie	Medical Director of Waubra Foundation, a not-for-profit organisation formed to foster independent research into wind farms and health)	Did not attend meeting but lodged a copy of her submission to Australian Federal Senate Inquiry on Rural Wind Farms

**Table 2. Ms Bruty's Representatives**

<b>Experts</b>	<b>Organisation</b>	<b>Area of Expertise</b>
Ms Kirsten Bauer	Aspect Studios Pty Ltd	Landscape Architect
Dr Grant Palmer	Centre of Environmental Management, University of Ballarat	Habitat expert
Mr Brett Lane	Brett Lane & Associates Pty Ltd	Ecologist/Brolga expert
Mr Christophe Delaire	Marshall Day Acoustics	Acoustic engineer

**Table 3. Experts Engaged by the Applicant**

### **MEETING PROCESS**

At the beginning of the meeting each of the parties exchanged copies of their written submissions. Prior to the meeting, each of the parties exchanged expert's observations and reports. To provide background for the purpose of the site inspection executive summaries of the submissions were required to be provided to the Department 7 days prior to the meeting.

The meeting commenced on the first day with Mr Townsend outlining the project background and key contentions on behalf of the project proponent. Mr Hall, representing Pyrenees Shire Council followed, avoiding repetition of what had gone before and with an explanation of local policy and the adequacy of supporting documentation during council's consideration of the application.

Mr Foster of the Country Fire Authority (CFA) then made a brief presentation drawing attention to the fact that a Wildfire Management Overlay (WMO) does not apply to this site, the apparent risk of bushfire and the need to manage vegetation around turbines.

The objector parties, including those supporting Ms Bruty, followed to an agreed order with each focussing on key issues in a commendable endeavour to each avoid repetition.

Ms Bauer was also present on the first day to explain and answer questions on her visual impact advice.

On the second day Mr Dekker provided an overview presentation on behalf of DSE. Mr Richard Hill, of DSE and with special expertise in Brolgas made himself available, at the same time as Brett Lane, the proponent's Brolga expert, to answer questions and participate in a general discussion on the challenges and opportunities for Brolgas in the area and as a result of the proposed development.

In the latter part of the second day Mr Delaire and Mr Palmer were also in attendance providing an overview of their advice and responding to questions. The meeting concluded with an opportunity for Mr Townsend to respond to the issues raised in the course of the two days and for all present to discuss and as far as possible agree the nature and extent of conditions that should be included on a permit should one be granted.

## **SUBMISSIONS**

**Mr Townsend on behalf of the permit applicant made the following key points in support of his clients:**

- The proposal will deliver an annual CO2 abatement of ~22,000 tonnes
- The proposal will comply with the New Zealand Standard (NZS6808:1998) for noise generated by wind turbines
- The proposal comfortably complies with the relevant provisions of the Planning Scheme and the Liberal Nationals Coalition policy for wind farms
- There are no flora and fauna reasons why the proposal cannot proceed
- The proposal has been expressly crafted to avoid unacceptable impacts on the local Brolga population
- There are no Aboriginal cultural heritage reasons why the proposal should not proceed
- The proposal will have a particularly low impact on neighbouring landowner amenity
- Impacts on land values are not a relevant consideration
- No parts of the public realm and no existing dwellings will suffer a high visual impact
- No properties will suffer any unreasonable shadow flicker
- Communication with neighbouring land owners has been thorough
- Any impacts of electro-magnetic interference on television reception can be adequately managed
- The permit applicant will commit to decommissioning
- A comprehensive environmental management plan will be prepared

**Mr Hall on behalf of Pyrenees Shire Council made the following key points:**

- The Council's failure to determine the application within the prescribed timeframe was due to it being placed on hold while matters were resolved by DSE and Brett Lane & Associates.
- Council required extensive notification of the application to all residents within 5 km of the site.
- Glenelg Hopkins Catchment Management Authority, Powercorp and VicRoads had no objection to the permit application.

- Mr Hall also wanted to record that Council had requested a deferral of the original VCAT hearing date.
- A majority of dwellings to the east of the site are in the rural living zone at least 2.5km from the proposed turbines
- A permit was recently approved for a dwelling to the south of the wind farm site, but at a distance of greater than 2km from the proposed wind farm.
- Two of the three proposed wind turbines straddle the boundary of adjoining crown allotments. Council's preference would be for these to be sited within the boundaries.
- A condition requiring the restructuring of the lots to prevent fragmentation of lots around the site in the future would be beneficial despite not being specifically triggered by a restructure overlay applying to this land.
- Council had sought the views of Dr Thorn, an expert in noise related matters, for his views on whether the proposal will breach the NZ:6808 1998 Standard.
- Dr Thorn advised that with quiet background noise there may be noise heard at some residents but levels should remain well within those required by the standard.
- Should a permit be granted a condition should be included requiring background noise testing to be carried out prior to development, to the satisfaction of the responsible authority.
- Shadow flicker is not an issue that would affect local residents.
- Council had been provided with insufficient information, including from BL&A and DSE, to be sure about the impact of the proposal on Brolgas.
- Council recognises that the proposed turbines will be visible to local residents but does not consider that the turbines will have a detrimental impact on these residents.

**Mr Foster for Country Fire Authority (CFA) presented the following key points.**

- The CFA's submission to the Senate Inquiry on wind farms was included as an attachment to their submission.
- A Wildfire Management Overlay (WMO) does not apply to the site.
- The CFA consider there is always a risk of fire from parts of equipment not being lubricated or becoming loose therefore the ongoing maintenance of wind farm equipment is required to reduce this risk.
- On the issue of wind turbines in areas with significant native vegetation Mr Foster believes that a balance can be struck between the CFA's requirements and those of DSE.

**Mr Dekker for DSE presented the following key points:**

- DSE is broadly satisfied that the *Chepstowe Wind Farm – Brolga Risk Assessment*, prepared by Brett Lane & Associates Pty Ltd, dated August 2010 provides an appropriate response to the *Guidelines for the Assessment of Potential Wind farm Impacts on the Brolga* (DSE 2009).
- DSE considers the *Chepstowe Wind Farm Native Vegetation Loss and Offset Calculation*, prepared by the Centre for Environmental Management, and dated September 2010 provides an adequate response to the three-step approach documented in *Victoria's Native Vegetation Management - A Framework for Action* (DSE 2002).
- However, as some of the native vegetation proposed to be removed is of 'very high' conservation significance, consent from the Minister for Environment and Climate Change is required. DSE has prepared and submitted a brief to the Minister, and is currently waiting for a response.

### **Objector Parties**

The common issues raised by the objector parties, including those persons supporting Ms Bruty, can be summarised as follows:

- Due to the risk of bush fire, turbines should be turned off on days of high fire risk.
- The submitted noise data was inadequate and the noise of the proposal could potentially impact on the health of residents in proximity to the site.
- Impacts on local flora and fauna, including, in particular on broilga breeding and habitat.
- Proposal will lead to a reduction in local property values
- Visual amenity of local residents impacted upon
- The cumulative effect of an additional wind farm in close proximity to Stockyard Hill project in terms of noise, health, landscape value, visual amenity, land value and flora and fauna
- Potential of the site to have cultural heritage sensitivity
- Lack of community consultation
- Net loss in employment
- Could lead to increases in power costs
- No net reduction in green house gas emissions

Mr and Ms Leontic, who could not attend the meeting, lodged a written submission prior to the meeting and the issues they raised are included in the issues listed above. It is also noted that the Trust for Nature, which had previously registered with VCAT as a party to the proceeding, withdrew its statement of grounds prior to the meeting.

### **Discussion of Issues**

As explained to the parties during the meeting, some of the issues raised such as impacts on property values and loss of a particular view are not matters relevant to the assessment of a planning permit application.

The key relevant issues raised by the submissions were:

- Visual amenity
- Cultural heritage
- The impact (and cumulative impact) of turbine noise on nearby residents
- Health risks of wind farms
- Native vegetation removal
- The impact (and cumulative impact) of turbines on local Broilga populations and their habitat.

### **Visual amenity**

As identified by Ms Bauer the wind farm is not located adjacent or close to an identified significant landscape or renowned area of natural beauty or iconic landscape. The wind farm is not located near a township or a significant cluster of dwellings. There is only a limited number of dwellings within 1.5km to 3.0km distance from the turbines. The nearest cluster of residents in the rural living zone are located at a reasonable distance and the impact of the three turbines on these residences can best be described as low to moderate. The site inspection revealed that the proposed three turbines, while visible would not have an overwhelming visual presence such that could not be addressed, for example, through landscaping. It is acknowledged that in some cases dwellings have been sited to take advantage of views to Mt Emu, further to the west, and the proposed turbines will become an added feature in this view. However in the absence of there being any "right" to preserve a view of Mt Emu for these properties, the test is whether the addition of the turbines constitutes an unreasonable impact on the amenity of these dwellings. Due

to the distance and moderate quality of the intervening landscape the impact is not considered to be unreasonable.

### **Cultural heritage**

Indigenous cultural heritage sites are known to exist in the vicinity of the subject land. The site itself, however, has not been identified as an area of high sensitivity. Under the *Aboriginal Heritage Act 2006* there is provision for a voluntary Cultural Heritage Management Plan (CHMP) to be prepared. This may be worthwhile given the potential for sites to be discovered, especially in the rocky part of the site where the ground surface is likely to have remained undisturbed since European settlement. The applicant expressed a willingness to consult the Wathaurong people, who now have Registered Aboriginal Party status, and to provide for Wathaurong observers or monitors to oversee earthworks on the site and respond to identification of any cultural heritage material that may be found. Both the applicant and Council agreed to the wording of a condition ensuring that any excavation works will be undertaken under observation by a representative of a Registered Aboriginal Party (Wathaurong).

### **The impact of turbine noise**

Following the gazettal of Amendment VC78 to all Victorian planning schemes on 15 March 2011, the New Zealand Standard NZS:6808 2010 now applies to Victorian wind farm applications. The potential for this change was identified at the meeting on 22-23 February and there was general agreement among the parties, including the applicant that the 2010 standard should be and can be complied with, indeed the application had been assessed against the updated standard, as well as the 1998 version in place when the application was lodged.

The 2010 standard makes little substantive difference to the noise objectives for wind farms. The main difference is that the 2010 standard specifies areas of "high amenity", where background noise levels are below 35dBA – and mandates such areas for background noise testing. There may be a need for background noise measurements at the unoccupied house (near Mr Oddie's house) within 2 km of the site in order to determine whether it meets the "high amenity" criteria prescribed under the 2010 standard.

Although there are no predicted noise levels greater than 35dB(A) at any existing or approved dwellings, based on their experience with noise complaints from the Waubra Wind Farm, Council recommends background noise testing to be undertaken for all dwellings within 3km of the wind farm.

In terms of background noise testing the applicant has agreed to meet the lowest possible noise limits prescribed under the NZ 1998 standard, under which background noise testing would be simply of academic interest – no matter how low the current backgrounds, the lowest maximum noise level that can be prescribed is 40dB(A), which the modelling makes them confident they can meet at the nearest non-participant house, which is at a distance from the wind farm of greater than 2 km.

The key question, now that NZS 6808:2010 applies, is what additional controls would need to be imposed on the wind farm's design and operation under the 2010 standard. Future Energy stated at the meeting that it is committed to meeting the requirements of the 2010 standard

Mr Delaire pointed out that the 1998 standard assumes noise attenuation only by distance and air absorption with no reduction allowance for ground absorption or topographic shielding. It also assumes that all turbines are facing the receptor.

However the 1998 methodology can lead to under-prediction so Marshall Day Acoustics (MDA) uses the International standard value which allows “octave band” – higher absorption for higher frequencies. MDA’s predictions forecast a level of 38 dBA at the nearest house (Mr Oddie’s residence) and 30 dBA at the nearest occupied “non-stakeholder” house.

During the discussion of conditions both Council and the applicant proposed conditions requiring that an independent post construction noise monitoring program be carried out. There was agreement also for noise levels to be regulated in accordance with the 2010 standard.

### **Health risks of wind farms**

Health concerns associated with ‘infrasound’ from wind turbines were raised by many parties, Mr Dean described his personal experience from the Waubra wind farm and the report commissioned by him and prepared by Dr Thorn – “*The Dean Report*”- was submitted for consideration.

The views of Dr Sarah Laurie, medical director of the Waubra Foundation, were also provided to the Department prior to the meeting together with a copy of her submission to the Australian Senate Inquiry on Rural Wind Farms. Mr Dean also presented to the Australian Federal Senate Inquiry, which was due to complete its hearings on 31 March 2011.

The fact that Mr Dean’s health has deteriorated was not disputed. The precise nature of the causal link between such health concerns and wind farms has yet to be ascertained beyond doubt, especially for persons residing more than 2km distance from wind turbines. Given no resident (other than the wind farm landowner) lives within 2 km of the wind farm and that there are only three turbines proposed for Chepstowe – with no residents ‘surrounded’ on all sides – there is little to demonstrate any detrimental health impact of the proposal to warrant recommending that it should be refused on these grounds.

It must be noted though that these health issues have been reported (most notably in the local example of the Waubra wind farm). It may be pertinent for the Minister for Health to consider initiating an independent expert investigation of the claims that have emerged through this process. Equally the outcomes of the Senate Inquiry are likely to be of assistance.

### **Native vegetation removal**

In addition to the direct removal of vegetation for the tracks and turbines themselves, the CFA require fire mitigation measures to be applied. This involves management of native vegetation within 30m of each turbine, which may affect vegetation quality. The removal of any native vegetation will require the applicant to adopt the three-step approach documented in *Victoria’s Native Vegetation Management - A Framework for Action* (DSE 2002).

The *Chepstowe Wind Farm Native Vegetation Loss and Offset Calculation*, prepared by the Centre for Environmental Management (CEM) and dated September 2010, provides an assessment of the vegetation and fauna present on the site and the wider area. In assessing the fauna and native vegetation values in and around the site CEM used a combination of desktop assessment and field inspections. From field inspections which took place in February 2008 and August 2010 no significant flora was observed.

Dr Palmer's 2010 inspection showed high coverage of "exotic species", with the vigorous growth of these species reflecting wet conditions at the time. However, he was satisfied that there was a "low probability" that significant species would have been missed in the August 2010 survey. A search of Environment Protection and Biodiversity Conservation Act (EPBC) protected matters revealed 7 species that could potentially occur within 5km of the proposed site. Following consultation with DSE it was agreed to round up quality scores for several sites in order to better reflect the average scores based on previous assessments.

DSE is generally satisfied with the assessments that have been carried out. However, as some of the native vegetation potentially being removed from the Chepstowe wind farm site is of 'very high' conservation significance DSE has stated that consent from the Minister for Environment and Climate Change is required.

The applicant has confirmed a willingness to accept the CFA's recommended 30 metre vegetation management, affecting approximately 1.1 ha of vegetation, adjacent to the wind turbines. Land is available for this and additional offsets within the wind farm property.

### **Fauna (excluding Brolga)**

Two important sources of information in relation to fauna in Victoria are the Birds Australia Atlas (BAA) and the Atlas of Victorian Wildlife (AVW). There has been no data-sharing agreement between the two since 2002. Not infrequently this makes reliance on AVW problematic, although less so in areas like this where there is limited access for casual birding (records from which are more likely to be submitted through BA portal).

The AVW identifies 15 significant species (including Striped Legless Lizard, Plains Wanderer and Latham's Snipe) within a 5km radius of the site and the EPBC list of threatened species identifies 19 species predicted to occur. However, in Dr Palmer's opinion there is unlikely to be "significant habitat for fauna species that may be considered sensitive" within close enough proximity of the proposed wind turbines. The quantum of habitat to be lost to turbine footings & tracks is unlikely to be significant. Excluding surveys of Brolga, the surveys failed to identify any significant wetland habitat sites within 5 km of the site. Dr Palmer also considered that the proposal is unlikely to affect large birds of prey, wetland birds or bats.

His view that bat numbers are likely to be low over treeless grassland is supported by DSE research which highlights the importance of trees, even isolated paddock trees, both for shelter and for foraging. Most bat species are unlikely to fly high enough routinely to be at risk of collision.

There is merit for including a condition on the planning permit to ensure that a Zoologist is present on site to identify, rescue and relocate any species found during the construction of the wind farm, as has been done elsewhere. While no threatened raptor species are expected to be at risk from the wind farm, it may also be appropriate to have a condition on the planning permit requiring the management of the site and the area within some reasonable distance of the turbines, perhaps the triangle of land formed by the three towers plus a 200 m buffer, to remove any carcasses, of either livestock or wind turbine collision casualties, and to effectively control rabbits, so the potential for Wedge-tailed Eagles and other raptors to be attracted to this danger area is minimised.

### **The impact (and cumulative impact) on local brolga populations and their habitat**

The Brolga (*Grus rubicunda*) is one of Australia's two species of crane. Although common in northern Australia, a discrete population of 600-650 individuals occurs in south eastern Australia, centred on south-western Victoria. In Victoria the Brolga is listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1999*.

Brolga habitat has two components. In winter-spring adult pairs disperse widely across the plains of western Victoria to nest in shallow wetlands. In summer-autumn Brolgas progressively gather at the few remaining permanent wetlands, known as 'flocking' sites. The majority of known nests and flocking sites are on private land.

Loss and degradation of habitat and predation by foxes has over the last two decades seen a steep decline in the Victorian Brolga population, with nesting pairs now around 200-250. Although there is no evidence of the wind energy industry contributing to this decline, a significant proportion of the State's Brolga population is within areas with large potential for wind farms. To avoid a further decrease in numbers, key representatives of the wind energy industry in south-west Victoria have come together to work with the Clean Energy Council, State and Commonwealth Government departments and Bird Observation & Conservation Australia (BOCA) to conduct essential research on Brolgas in this region.

### **Observations and Recordings**

Wind farms can lead to the displacement of Brolga from their habitat by reducing or excluding Brolga access to roosting or breeding wetlands or to their foraging habitat. The Brolga Scientific Panel, a research group chaired by Mr Hill, recommends adopting a 300m turbine free buffer around all important brolga habitat to mitigate against disturbance effects.

The observations made by experts both at the Chepstowe site and in the wider south west Victoria area have identified some general patterns of Brolga behaviour, which also needs to be balanced with understanding that there are irregular movements too.

### **Brolga Breeding Movements**

In establishing home range modelling parameters, BLA conducted extended observations at 33 nests in south west Victoria (not exclusively Chepstowe) over the 2008/09 period. The reported Brolga breeding-period movements and their foraging behaviour is based on these observations. As this was a peak drought period the Brolga would have been using only optimal habitat. Approximately 50% of recorded movements were over a distance of less than 400m from their nest, with a further 25% up to 800m, and almost all remaining movements less than 3km.

Brett Lane & Associates (BLA), in its review and assessment of all reported Brolga breeding records within 5 km of the Chepstowe wind farm, site identified 23 breeding attempts at 9 sites, at least 12 of which took place in the past 20 years (which included an extended severe drought).

When breeding, Brolga foraging movements within a range of about 400m of the nest are relatively indiscriminating; close to the nest they forage on both wet and dry habitat. Beyond that distance they have an increasingly strong preference for foraging in wetland habitat. Each bird makes 1-2 movements from and back to the nest each day. Breeding home ranges are therefore modelled on the basis of a 300m radius core, with an additional 400m buffer and includes all wetlands out to 3km from a nest. In response to questions and references from submitters to

observed flights etc, Mr Lane acknowledged that there could also be occasional movements which vary from those predicted by the model. Brolgas will also opportunistically forage on feed put out for livestock. This was witnessed by Ms Bruty and other local residents, some of whom reported “feeding” the Brolgas on their property.

DSE’s *Guidelines for the Assessment of Potential Wind Farm Impacts on the Brolga 2009* recommends a cautious approach to assessing and mitigating potential turbine impacts on Brolga. The Guidelines endorse a series of steps to be followed to minimise impact of turbines on Brolga. Given that the proposal is for only three turbines, DSE’s assessment of the Chepstowe proposal used a slightly condensed version of the four step approach. In their assessment DSE reached the view that the proponent accurately identified the flocking and nesting sites relevant to the proposal. The rationale adopted by BLA is based on movement and habitat preferences identified through its south western Victorian studies. Mr Lane acknowledged that while there may be some movements other than those incorporated into his breeding home range model, those movements would be uncommon and the risk of birds, returning to breeding sites, colliding with turbines is considered to be low. DSE accepts the proposed home range dimensions of 300m radius with an additional 400m disturbance buffer and out to 3km to wetland habitat patches. In reaching this conclusion DSE was satisfied that work conducted by BLA was adequate subject to appropriate conditions to offset the small residual risk to Brolgas.

### **Brolga Flocking Movements**

Brolgas congregate into flocks outside of breeding season. Major flocking sites are generally well known. Local flocking sites in the neighbourhood of Chepstowe are generally to the west and south-west, at Pink Lake near Skipton, St Marnock’s Swamp near Lake Goldsmith and Lake Lakaput between Beaufort and Streatham. Up to 58 birds have been recorded at Pink Lake, where they have been observed undertaking flights of over 3.5 kms between foraging and resting areas. As a general rule, the further the birds are travelling the higher they fly.

Within flocking areas, while most flights are during daylight hours, some departures from overnight roosting sites may occur before sunrise, and some returns from foraging areas to roosts may happen after sunset.

During “migration season” smaller groups may stage at non-traditional flocking sites, which is the likely explanation of the 1987 observation of 12 birds west of Chepstowe (this view is supported by Mr Hill at DSE). The notion of movements between breeding sites and flocking sites being labelled as “migration” may be misleading as the movement may be undertaken over several stages with timing influenced by local conditions (eg seasonal levels in wetlands). It is also likely that there is some exchange of individuals between flocking sites, and that some flocking “sites” are in fact broader areas within which there may be several roosting and foraging sites among which the birds move over the course of their stay. No information was brought forward during the meeting of parties about the movements and behaviour of non-breeding birds during the breeding season (eg whether they stay together or disperse, or the extent to which they might remain in or near flocking sites).

### **Evidence of Collision with Wind Farms**

There is limited data on interactions between Brolgas and wind farms. A related species, the European Crane, featured in only 2 cases of approximately 30,000 records of bird fatalities resulting from wind farm turbine collisions in a German

database. European Cranes have been observed to avoid wind turbines by about 700 metres. In terms of the cumulative impact of the proposed Chepstowe Wind Farm and the Stockyard Hill Wind Farm (which is 5km from Chepstowe) it is considered that the aggregate risk to Brolga of collision with turbines and of abandonment of historical breeding habitat as a result of avoidance of turbines is low. This reflects acceptance of Mr Lane's basis for delineating breeding home ranges, which was supported by DSE and to which the modified layout of the turbines responds. It also reflects the available information about Brolga flight behaviour and about interactions between other species of cranes and wind farms in other parts of the world.

### **Mitigation Measures**

Mitigation measures can be used to reduce the risk of collision with powerlines, which appear to present a greater risk than the turbines themselves. However it is noted that the Chepstowe proposal does not propose any above ground powerlines. As a mitigation measure for the residual risk arising from the Chepstowe proposal, powerlines in high risk areas could be targeted, especially near or between known flocking sites. This offsetting can be conducted by marking power lines which present a collision risk to Brolgas to make them more readily visible. Another mitigation measure may be to improve breeding habitat, for instance by active fox control, although the disturbance impact associated with shooting may be greater than the offset benefit of fewer foxes. Mr Lane noted that the norm now is to prepare a Bird and Bat Adaptive Management Plan, recognising that site characteristics and other factors may lead to the need for a management plan to be adjusted in the light of observations and experience. The proponent would be happy with a generic provision for appropriate offsets.

### **Conclusions**

Based on the information collected and the established recognised Brolga behaviour it has not been demonstrated that the proposed wind farm will detrimentally affect the local Brolga population. The proponent is willing to adopt measures that can offset any residual risk (albeit a low risk) of collision with turbines. The residual risk should be calculated conservatively given the very limited empirical data about interactions between Brolgas and wind farms. Conditions can be placed on any planning permit to require this offset and a bird and bat adaptive management plan.

It was noticed during this process that there is seemingly a correlation between the negative impacts of wind farm proposals and non-stakeholders. This begs the question that there must be some way that non-stakeholders could benefit from a wind farm in their neighbourhood?

In the case of Chepstowe the land owner seems to be able to apply financial reward gained from being a participant to the ecological improvement of his farm. It would be a positive contribution if wind farms could assist in delivering an improvement to biodiversity in the area they wish to develop. This could be especially beneficial to an area when compared to the significant losses to biodiversity that have resulted from land clearance and (less enlightened) farming practices.

## **Review of Conditions**

The final matter during the meeting of parties addressed the conditions of a potential permit with a view to framing appropriate conditions should a permit issue. As part of their submissions, both Council and the applicant put forward draft sets of permit conditions.

As a result of the detailed discussions held over the previous two days a number of conditions were accepted as no longer being appropriate in their drafted format. The schedule to the order contains conditions that have been discussed and agreed upon at the meeting as well as conditions that have been considered as appropriate for this development.

## **Update of Planning Scheme**

Since the meeting of parties on 22 and 23 February Amendment VC78 has been gazetted, which makes the following changes to all Victorian Planning Schemes:

- Clause 19.01-1 of the State Planning Policy Framework (SPPF) has been amended to promote greater consideration of the effects of a Wind energy facility proposal on the local community.
- Clause 52.32 to include additional application requirements, including the need for:
  - a plan showing all dwellings within two kilometres of a proposed turbine
  - a concept plan of associated transmission infrastructure, electricity utility works and access road options
  - an assessment of noise impacts prepared in accordance with the New Zealand Standard NZS 6808:2010, Acoustics – Wind Farm Noise, in place of the existing 1998 Standard.
  - all applications to be assessed to determine where a ‘high amenity noise limit’ is appropriate, using procedures set out in the Standard
  - amend the decision guidelines:
    - with an updated reference to the revised Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2011)
    - by referencing the New Zealand Standard NZS 6808:2010, Acoustics – Wind Farm Noise
  - provide transitional arrangements that preserve existing, pre-VC78, provisions for a 12 month period for any application for an extension of time or amendment to an existing Wind energy facility planning permit where it does not result in a material change in scale or impact.
- Clause 61.01 to make local councils the responsible authority for all wind energy facility permits. This removes the previous provision whereby for facilities over 30 megawatt capacity the Minister for Planning was the responsible authority.
- Clause 81.01 by updating reference to the most recent edition of the Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2011).

The new provisions and guidelines came into operation on 15 March 2011.

### **Proposal's response to state and local policies**

- The proposal is consistent with the State Planning Policy Framework (SPPF) Clause 19 – *'Infrastructure'* of the Pyrenees Planning Scheme which seeks to *"promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met"*
- The proposal accords with the particular provisions contained in Clause 52.17 - *'Native Vegetation'*. A purpose of this policy is *"to appropriately offset the loss of native vegetation"*.
- The proposal is also consistent with the particular provisions contained in Clause 52.32 - *'Wind Energy Facility'*. The purpose of this policy is *"to facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area"*.
- The proposal is also consistent with the Victorian Government's *Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria* (March 2011).
- The proposal represents an appropriate response to the Farming zone that applies to the site, by not adversely affecting the use of land for agriculture. Additionally the proposal is *"based on comprehensive and sustainable land management practices and infrastructure provision."*
- The proposal represents an appropriate response to the Environmental Significance Overlay which seeks *"to ensure that development is compatible with identified environmental values"*
- The proposal represents an appropriate response to the Restructure Overlay which seeks to *"preserve and enhance the amenity of the area and reduce the environmental impacts of dwellings and other development"*.
- The proposal ensures that the amenity of adjacent sites is not compromised by ensuring that;
  - the level noise output from the proposed wind farm remains within acceptable standards; and
  - the three turbines proposed will not pose an unreasonable visual amenity impact on local residents;
- The proposal appropriately responds to the submissions raised by the objector parties in relation to the potential impact on; local broilga and their habitat; aboriginal cultural heritage.

**Recommendation**

Accordingly, a recommendation is made to the Minister for Planning that:

- a) A Planning Permit No1676/10 should be granted for use of the land as a wind energy facility and removal of native vegetation, subject to the conditions contained in the Schedule to the Order.
- b) Following any decision by Governor in Council that the report be made available to the public and published on the DPCD website.

**Jane Monk**  
**Director, State Planning Services**

**Jack Krohn**  
**Principal Environment Assessment Officer**