

## Planning Permit Amendment Application – Lal Lal Wind Farm

**Permit No.: PL-SP/05/0461**

### Introduction

The Minister for Planning issued a permit on 30 April 2009, granting approval for the Lal Lal Wind Farm under the Moorabool Planning Scheme. The wind farm is located across two sites at Yendon and Elaine, south-east of Ballarat, and consists of a total of 64 wind turbines. Since the project was approved, WestWind Energy has undertaken detailed design and pre-construction surveys in the preparation of compliance documentation.

In April 2013 site establishment works for the facility began with earthworks to prepare the foundation for the: substation, foundation for the amenities building; the main site entrance and the start of an access track. The Department of Planning and Community Development has confirmed that the development of the facility has commenced under the planning permit. In addition to commencing construction, WestWind has also:

- Paid lease fees in excess of one million dollars to the six host landholders across the two sites
- Invested over one million dollars engaging specialist consultants to complete front-end design requirements, including geotechnical surveys, electrical design, civil/structural design, EPC tendering documentation, cultural heritage, flora and fauna.
- Submitted a Grid Connection Application to the Network Operator, having undertaken detailed powerline, substation and grid connection design, and is currently negotiating requirements for the Grid Connection Agreement
- Obtained a Generator Licence from the Essential Services Commission
- Commenced vegetation removal and the provision of native vegetation offsets (under a separate permit)

Since lodgement of the application (March 2008), substantial advancements in wind turbine technology has allowed for slightly larger machines that provide a significant increase in the output from the wind farm. This increase in electricity output can occur without increasing the number of turbines installed and without any material detriment to those living in the vicinity of the project.

### Amendment Summary

The amendment proposes to:

- increase turbine height from 130 metres in height to 161 metres in height;
- remove tower height and rotor diameter restrictions;
- remove requirement for transformers to be located within tower;
- apply 2010 noise standard for wind farm noise; and
- reduce maximum number of turbines from 64 to 60 turbines across both the Yendon and Elaine sites;
- Extend the completion date for the permit

The four turbines to be removed (as shown on the noise plans in Appendix E) are YSWT-02 and YSWT-31 from the Yendon section as well as ESWT-09 and ESWT-22 from the Elaine section.

## Specific Amendments to the Permit

Specifically, we respectfully request the changes to the following permit conditions.

<b>Amend</b>	<b>Permit preamble)</b> Use and development of the land for a Wind Energy Facility comprising a maximum of 60 wind turbines and their....
<b>Amend</b>	<b>Condition 2a)</b> The wind energy facility must comprise no more than 60 wind turbines with no more than:  i) 38 turbines on the land at Yendon, and ii) 22 wind turbines on the land at Elaine.
<b>Amend</b>	<b>Condition 2b)</b> The overall maximum height of the wind turbines (to the zenith of the sweep of the rotor blade tip) must not exceed 161 metres above foundation level, <i>unless agreed in writing with the Minister for Planning.</i>
<b>Delete</b>	<b>Condition 2c, 2d and 2i</b> from the planning permit
<b>Delete</b>	<b>Condition 5</b> from the planning permit as works have commenced
<b>Replace</b>	<b>Condition 23, 24 and 25</b> with the following DPCD Model Conditions to reflect the new noise standard:

### **Performance requirement**

**Condition 23.** *The operation of the wind energy facility must comply with New Zealand Standard 6808:2010, Acoustics – Wind Farm Noise (the Standard) as modified by this condition to the satisfaction of the responsible authority. The following requirements apply:*

- a. *The operator must ensure that at any wind speed, wind farm sound levels at noise sensitive locations (as defined in the Standard) do not exceed a noise limit of 40dB L A90 (10 min), provided that where the circumstances specified in condition 14(b) apply, the noise limit of 40dB L A90 (10 min) will be modified as specified in condition 14(b).*
- b. *At the specified assessment positions referred to in condition 15(b), the noise limit of 40dB L A90 (10 min) referred to in condition 14(a) will be modified in the following way when the following circumstances exist:*
  - *where the background sound level is greater than 35 dB L A90 (10 min), the noise limit will be the background sound level L A90 (10 min) plus 5 dB;*
  - *where special audible characteristics, including tonality, impulsive sound or amplitude modulation occur, the noise limit will be modified by applying a penalty of up to + 6 dB L90 in accordance with section 5.4 of the Standard;*

**Noise compliance assessment**

**Condition 24.** For the purposes of determining compliance, the following requirements apply:

- a. Acoustic compliance reports shall be prepared by a suitably qualified and experienced independent acoustic engineer to demonstrate compliance with the noise limits specified in the Standard.
- b. Noise assessment positions must be located according to the Standard, and shown on a map.
- c. A final compliance report must be submitted to the responsible authority after a 12 month period following full operation of the facility.
- d. Compliance reports should be publically available.
- e. Following facility commissioning, all complaints shall be managed following procedures set out in the noise complaints management plan.

**Noise complaints evaluation**

**Condition 25.** For the purposes of complaints evaluation, the following requirements apply:

- a. Post installation sound levels shall, where practical, be measured at the same locations where the background sound levels were determined (GPS coordinates and a map showing these locations is to be provided).
- b. If a breach in compliance is detected, or noise complaints are received, an independent assessment report must be prepared by a suitably qualified and experienced independent acoustic engineer to:
  - identify the weather or operational conditions associated with the complaint / breach
  - analyse the uncertainty and confidence levels in the monitoring, and the steps taken to reduce uncertainty
  - target assessment to identify the cause and remediation actions
  - submit a remediation plan to the satisfaction of the responsible authority outlining, the investigation process, complainant communications, actions and timelines to resolve the complaint/breach

*If the complaint is not resolved through the processes outlined above, the responsible authority may request an independent peer review at the cost of the permit holder and on/off shut down testing to resolve uncertainty.*

- c. Following the initial post-construction reporting process, additional independent assessment may be requested by the responsible authority at any time, where complaints are received and are considered to reasonably warrant investigation.*
- d. If investigations indicate special audible characteristics are potentially occurring, procedures outlined in Appendix B of the Standard should be applied.*

**Amend****Expiry**

**Condition 29** This permit will expire if one of the following circumstances applies:

- ii. the development is not completed within 11 years of the date of this permit.

**Re-number**

Re-number conditions as appropriate.

**Rationale for the permit amendment*****Electricity yield***

Since the lodgement of the application (March 2008), substantial advancements in wind turbine technology has allowed for slightly larger machines that provide a significant increase in the output from the wind farm.

This change in technology is reflected in the number of wind energy facility permits that have sought height increases following their original approval and in more recent applications where a taller structure has been applied for.

An increase in height, as proposed by the new Condition 2b would allow for the installation of wind turbines of around 3 megawatts capacity, instead of the 2 megawatt class turbines as originally envisaged. Larger rotors will also ensure a dramatic improvement in predicted energy yield. For example, increasing blade length from 46m to 56m increases the swept area of the blades (i.e. the area capturing the wind) by 67%. Also, increasing the tower height by a similar amount places the rotor in a higher wind speed zone and reduces turbulence created by topography and barriers such as trees. Due to these factors, calculations for the site indicate that energy generation will be approximately 50% greater than under the existing permit conditions. Please see Table 1 below for increased output details.

	Approved Project	Amended Project	Actual Increase	Percentage Increase
Installed Capacity (MW)	128	192	64	50%
Annual Power Generation (GWh)	336	504	168	50%
Annual CO <sub>2</sub> Savings (ton)	336,384	504,224	167,840	50%
Annual Council Rates (\$)	\$228,000	\$299,200	\$78,400	31%
Number of Average Households Powered	63,111	94,666	31,555	50%
<i>* Amended installed capacity based on a 3.2MW turbines</i>				

Table 1: Potential increases achievable with the approved amendment

### ***Flexibility for turbine selection***

Victoria is well placed to inherit decades of technological advancement from international manufactures. Wind turbines currently on the market all vary with regard to tower lengths, hub heights and rotor diameters. Traditionally, planning permit conditions have been too prescriptive when setting specifications for wind turbines in light of these advancements.

Later approvals, such as the Moorabool Wind Farm (which is approximately 8km away) allow for such flexibility by specifying an overall tip height without setting a rotor diameter.

The key parameter relevant to this amendment is the overall height of the proposed wind turbine. Achieving this flexibility is achieved by the removal of conditions 2c and 2d.

### **Assessment of the proposed amendment.**

#### ***Policy commitments of the new government***

Victorian Labor's *Platform 2014* document notes that "regional Victoria in particular benefits from a Government prepared to invest in clean technology, such as wind farms, as such investment generates local jobs." *Platform 2014* makes policy commitments to:

- take advantage of Victoria's excellent wind and solar energy resources to build a strong renewable energy industry which generates employment and economic growth for the State and reduces our environmental impact;
- implement a Victorian Renewable Energy Action Plan to attract Victoria's share of the \$36 billion dollars of investment in renewable energies forecast (in Bloomberg New Energy Finance report 2011) to occur in Australia by 2020; and
- review the anti-wind farm planning laws to ensure they promote investment and jobs, are based on credible science and reflect community expectations;

On 13 November 2014, a press release from the then Opposition Leader, (now Premier) committed to:

- Victoria leading the world in wind energy;
- getting the wind energy industry back up and running;
- wind back restrictive planning controls;
- reduce the exclusion zone around dwellings from two to one kilometre; and
- creating the \$20 million New Energy Jobs Fund which will offer grants of up to \$1 million to firms and companies specialising in high-growth renewable sectors.

It is understood that this policy platform will soon be introduced into the Victoria Planning Provisions.

It is clear that the new government's agenda is to facilitate the development of wind projects in Victoria. The policy platform of the new government is closely aligned to the policy environment of 2009 when the permit for Lal Lal Wind Farm was approved.

### ***Moorabool Planning Scheme***

The amendment will further the objectives of the State Planning Policy Framework (SPPF) by:

- improving efficiency in energy use through greater use of renewable energy and producing up to 50% more renewable electricity than the approved proposal (15.02-1);
- facilitating renewable energy development in an appropriate location with consistently strong winds over the year (19.01-1);
- respond to community demand for energy services and by setting aside suitable land for future energy infrastructure (19.01-1);
- generating economic and environmental benefits to the broader community from renewable energy generation while also minimising the effects of a proposal on the local community and environment (19.01-1)

The remaining clauses of the SPPF are adequately addressed by the approval proposal and the existing planning permit conditions.

The amendment will further the objectives of the Local Planning Policy Framework (LPPF) by:

- having a negligible impact on the landscape and scenic qualities of: forested hill slopes, hilltops and ridgelines. The amendment will not affect areas protected by the Significant Landscape Overlay (21.02-2).

The remaining clauses of the LPPF are adequately addressed by the existing approval and permit conditions. The amendment is consistent with the Farming Zone and the Design and Development and Environmental Significance Overlays. There are no local planning policies affected by the amendment.

Clause 52.32 – Wind Energy Facility is the only particular provision relevant to the amendment.

The amendment to the existing approval meets the objectives and requirements of this particular provision.

The amendment:

- will not impact on key views to and from regional landscape features such as the Werribee Gorge, Brisbane Ranges National Park, the Moorabool River and Mt Warrenheip and Mt Buninyong;

Matters regarding noise, blade glint, shadow flicker, electromagnetic interference and aviation safety are adequately addressed by existing permit conditions.

The amendment would not trigger any agency referrals.

### **VC 113**

On 31 July 2014 Amendment VC113 to the Victoria Planning Provisions came into effect. The amendment made changes to Clause 52.32 to enable minor amendments to be made to wind farm planning permits issued prior to 15 March 2011.

Before VC113 proponents with existing wind farm permits required the consent of dwelling owners within two kilometres of a proposed turbine to enable an amendment to the planning permit to be considered.

Clause 53.32-3 does not require the consent of dwelling owners to amend the permit unless the amendment of the permit would:

- Increase the number of proposed turbines; or
- Change the location of a proposed turbine so as to reduce the distance between any proposed turbine and an existing dwelling.

Clause 52.32-8 exempts applications from the decision requirements of Section 64(1), (2) and (3) and the review rights of Section 82(1)5 of the Act if the amendment of the permit does not:

- Increase the number of proposed turbines; or
- Change the location of a proposed turbine so as to reduce the distance between any proposed turbine and any existing dwelling.

This amendment request proposes a reduction in the total number of turbines. The amendment does not reduce the distance from proposed turbines to existing dwellings. Accordingly the permit can be amended without the need for owner consents and without review rights.

## Assessment against Planning & Policy Guidelines for Wind Energy Facilities

### *Landscape and Visual Amenity*

The amendment proposes an increase in the overall height of wind turbines which is illustrated in the photomontages. (See Attachment A) The Lal Lal Falls perspective shows the difference between 130m and 160m tip heights, and the other two locations at Yendon and Elaine show the difference between 130m and 150m. The five montages (from three viewpoints) illustrate the minor relative effect of the height increase.

Mr Alan Wyatt undertook an assessment of landscape and visual amenity impacts as part of the assessment of the original permit application. In assessing the original application Mr Wyatt concluded that:

- The wind farm site and surrounds had a low visual sensitivity to a wind farm development;
- The majority of viewers do not object to the construction of wind turbines on any but the most sensitive and localised landscapes;
- The site is a highly modified landscape and agricultural activities and human interventions have created a landscape that can absorb other changes; and
- Residents within three kilometres of wind turbines are in the zone of greatest potential visual impact. Many of these existing residences already have screening in the form of wind breaks and landscape mitigation can be effective in lessening the visual impact.

Mr Wyatt was asked to consider the impact of the proposed amendment and has advised that, “The increase in overall height of the turbines being imperceptible to any viewer,” and is, “Consistent with the findings of the Lal Lal Wind Farm planning permit application.” This view is supported by the attached photo simulations. A copy of Mr Wyatt’s advice is located in Attachment B.

The amendment does not affect any areas covered by the Significant Landscape Overlay.

The impacts of night time aviation safety lighting have already been assessed and lighting is permitted by the existing planning approval.

The amendment does not affect the requirement to offer landscape mitigation to all residences within 3km of the wind farm before and after construction. This will ensure that impacts on properties can be softened within the area of greatest impact.

### **Noise**

The amendment seeks to apply updated standards to the project which will ensure that the wind farm must comply NZS6808:2010. When considering the requirements of Section 5.3 of NZS 6808:2010 it is not possible for the ‘high amenity’ noise limit to be considered for the Lal Lal Wind Farm. There is no plan, policy, assessment or otherwise within the Moorabool Planning Scheme to suggest that the proposed Lal Lal Wind Farm area and surrounding environs warrant consideration of a high amenity noise level as described in NZS 6808:2010. For further detail please see the planning expert advice from Mr Phil Burn in Attachment D.

It should be noted that a larger capacity wind turbine does not necessarily equate to increased sound outputs. This will depend on the rated sound power outputs of specific wind turbine models and the selected turbines will be assessed. Noise management is an operational issue and is confirmed via the endorsed Noise Compliance Testing Plan. For additional information, noise contour maps are shown in Attachment E for both the Yendon and Elaine Sites.

### ***Blade glint***

Not affected by the amendment. Conditions on the permit require turbines and blades to be non-reflective.

### ***Shadow Flicker***

Conditions on the permit require shadow flicker to be less than 30 hours per year at any dwelling, which will be achieved with the higher tip height. This is an operational requirement whereby if a dwelling were to have shadow flicker at a level above the limit, and they were not a project participant, mitigation measures such as screening or shutting down turbine operation during the brief 'shadow-casting' periods, will be implemented.

The amended proposal is able to comply with this requirement as detailed in the shadow flicker assessment undertaken by Entura and the additional modelling undertaken using WindPRO (see Attachment F). The Entura report uses a model with a tip height of 150 metres, as this is the most common size available on the market, and the supplementary WindPRO assessments uses a 160 metre height. The 160 metre assessment shows there are no dwellings with shadow flicker above the limit at the Yendon site. The modelling at the Elaine site shows that two houses, A (H18aa) and B (J17ab) are over the limit prior to considering on-site conditions. The Entura report refers to these two dwellings, on pages 9 and 11 respectively, and the significant amount of screening vegetation indicating that shadow flicker is unlikely to penetrate to the house or its immediate surrounds. If there are any concerns from these residents, we are able to offer further screening, or install devices on the offending turbines which will make them temporarily shut down during periods of shadow casting. Hence, the amended height limit will not affect the project's capacity to fully comply with the shadow flicker requirement.

### ***Electromagnetic interference***

Not affected by the amendment. Conditions on the permit can be met with the increased height as shown in the Radio Link Exclusion Zone report by Lawrie Derrick and Associates in Appendix G.

### ***Aircraft Safety***

Not affected by the amendment. The approved permit allows for night time aviation safety lighting. Authorities to be advised as per the existing condition.

### ***Flora and Fauna***

Not affected by the amendment. Native vegetation is not affected by the amendment. The proposed amendment has been reviewed by an ecologist and it has been deemed that an increase in tip height and rotor diameter will not negatively impact on birds and bats in the area, as detailed in Attachment C, as most of the birds fly below the lowest point of the rotor.

### ***Cultural Heritage***

Not affected by the amendment. A Cultural Heritage Management Plan (CHMP) has been fully endorsed by the relevant authorities and all turbines remain within the areas approved in the CHMP.

### **Assessment against the panel report and approved planning permit**

Each of the conditions on the planning permit have been re-assessed in relation to the proposed height increase and are summarised below. The specific conditions that are affected by the height increase are:

- 1 Development Plans** for the Yendon Section have been endorsed by the Minister for Planning, with only the details of the wind turbine model yet to be provided. Under the amended permit, once a turbine type is selected, details of the model and an updated layout showing the omitted turbines will be submitted. Development Plans for the Elaine section will be submitted in due course.
- 2 Specifications: 2a, 2b, 2c, 2d and 2i** to be amended as requested above.
- 7 Environmental Management Plan:** Submitted and approved for the Yendon Section. Will not be affected by the permit. Plan for the Elaine Section will be submitted in due course.
- 11 On-Site Landscaping Plan:** Submitted and approved for the Yendon Section. Will not be affected by the permit. Plan for the Elaine Section will be submitted in due course.
- 12/13 Off-Site Landscaping:** Condition **12a** states that landscaping is to be offered to “the owners of all dwellings within 3km of a turbine where a turbine is visible”. The implication of this is that if turbines are visible from a greater number of dwellings, the proponent will need to allocate more resources for landscaping in order to satisfy the condition. Four fewer turbines will be visible.
- 14/15 Traffic Management Plan:** This will not affect the ability to meet the conditions associated with the TMP to be produced for the Elaine stage, however, as the Yendon TMP has already been approved, the only notable increase is that the longest load, the blade, is expected to increase by up to ten metres as the blades could be around 55m. However the pilot vehicle assistance and over-dimensional load conditions required by Vic Roads will still be complied with. Otherwise, the number of traffic movements, including concrete trucks, gravel trucks and over-dimensional loads will decrease by approximately 7%
- 16 Emergency Response Plan:** Submitted and approved for the Yendon Section. Will not be affected by the permit. Plan for the Elaine Section will be submitted in due course.
- 17 Bird and Bat Plan:** The height increase has been reviewed by an ecologist and it has been deemed that an increase in tip height and rotor diameter will not noticeably impact on birds in the area as almost all fly closer to the ground than the lowest point of the rotor’s swept path. Refer to Attachment C for letter from Brett Lane and Associates.

- 20 Television and Radio Reception Interference:** Management plan has been submitted and approved for the Yendon Section. Will not be affected by the permit. Plan for the Elaine Section will be submitted in due course. Since approval, digital signals (which are less prone to interference) have replaced analogue signals.
- 21 Blade Shadow Flicker:** The shadow flicker for both sites will satisfy the requirement to be less than 30 hours per year at any dwelling not involved with the project.
- 22-25 Noise Limits:** The latest noise standards are to be adopted as detailed above and will be reflected in an updated Noise Compliance Testing Plan.
- 29 Expiry:** An extension to the completion date is required. This aligns with the request for permit extension dated 9 February 2015.

## Conclusion

This amendment seeks flexibility to allow for the installation of wind turbines to a height of 161m. The installation of slightly larger machines will provide a significant increase in electricity output from the wind farm. The increased economic output will ultimately assist in reducing the cost of renewable electricity to the consumer.

The increase in renewable electricity output will occur while producing a net reduction in amenity impacts to those living in the vicinity of the project. This will occur due to the:

- reduction in the number of wind turbines to be installed; and
- application of the more stringent noise requirements (NZS6808:2010).

The amendment is likely to result in an increase in amenity standards enjoyed by residents in the vicinity of the wind farm. The amendment proposes a reduction in the total number of turbines, applies a stricter noise standard and does not reduce the distance from proposed turbines to existing dwellings. The permit can be amended without the need for owner consents and without review rights. The attached simulations illustrate the negligible impact on landscape and visual amenity. Residents in the immediate environs of the wind farm will be able to call on the proponent to provide landscaping to mitigate views.

The change envisaged by the amendment will not result in additional material detriment and as such there are strong grounds to approve the amendment request without the need for public notice.

The rapid development in technology and the benefit of greater electricity yield is also driving similar amendments to other approved wind farms, and the parameters requested here are similar to other projects in the area.

The changes proposed are minor and will result in significant benefits to the broader community through the additional supply of renewable electricity and future carbon savings. Accordingly we respectfully request the approval of this amendment.

**ATTACHMENT A - PHOTOMONTAGES**

Please refer to the five plans attached

**ATTACHMENT B – VISUAL EXPERT ADVICE**

Letter from Alan Wyatt

**ATTACHMENT C – BIRD EXPERT ADVICE**

Advice from Brett Lane

**ATTACHMENT D – PLANNING EXPERT ADVICE**

Advice from Phil Burn

**ATTACHMENT E - NOISE ASSESSMENT PLANS**

## Advice from Marshall Day Acoustics

Yendon Site: All dwellings below 40dB, as required, except for dwelling;

- N31ac which is owned by project landowners Gary and Margaret McTigue,

which meets the agreed landowner limit of 45dB.

Note: The cluster with J31aa, K31aa and K31ab are all landowner houses belonging to Egerton Farm (formerly Lal Lal Estate)

Elaine Site: All dwellings are below 40dB, as required, except for dwellings;

- J17aa which is owned by project landowners Russell and Marie Ford,
- L17aa which is owned by project landowner Mark Dunne, and
- L17ab which is owned by project landowners Brian and Helen Dunne

which all meet the agreed landowner limit of 45dB.

**ATTACHMENT F – SHADOW FLICKER REPORT**

Report from Entura and subsequent WindPRO report

**ATTACHMENT G – RADIO LINK EXCLUSION ZONES**

Report by Lawrie Derrick and Associates