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**Department of Planning and Community
Development**

DPCD REF

BMIN011632

PLANNING AND LOCAL GOVERNMENT

FILE REF

MINISTERIAL REF

CRITICAL DECISION
DATE

REQUESTED VOLUNTARY
FOR DECISION / INFORMATION / SIGNATURE

As soon as practical

MINISTER FOR PLANNING

SUBJECT

WAUBRA WIND FARM, PERMIT COMPLIANCE

DATE

22 August 2011

Name	Position	Phone no.
Prepared by	State Coordinator Wind Energy Facilities	
Reviewed by John Phillips	A/ Director, Planning Policy	9223 5344
Approved by John Ginivar	A/ Executive Director, Planning Policy and Reform	9223 5307
Approved by Prue Digby	Deputy Secretary Planning and Local Government	9208 3594

RECOMMENDATIONS

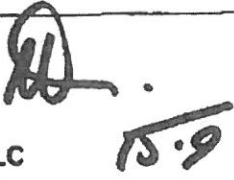
That you

a) Note the proposed compliance pathway

Noted
 Please Discuss

b) Sign the attached letter requesting further information from the proponent, for targeted Special Audible Characteristic noise assessment, maintenance records, and additional complaint records, as Stage 1 in a compliance pathway

Approved
 Not Approved
 Please Discuss

 MATTHEW GUY MLC Minister for Planning Date	
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8/9

PURPOSE

- 1 To brief you on the required pathway to resolve noise compliance at Waubra Wind Farm

BACKGROUND

- 2 Waubra Wind Farm is located 30 km north west of Ballarat on approximately 18,000 hectares of rural land owned by 36 land owners. The wind farm comprises 128 wind turbines with a generating capacity of 192 megawatts (MW)
- 3 Since the commencement of operation, complaints have been reported from 13 surrounding properties with 4 dwellings known to have been vacated and 7 dwellings reportedly purchased by the operator
- 4 You are the responsible authority for ensuring noise compliance with the 2 planning permits (across 2 municipalities). You have been separately briefed on these matters in BMIN010076 and BMIN010428
- 5 On 8 October 2010, the proponent (Pyrenees Wind Energy Developments) submitted a report entitled 'Waubra Wind Farm Post Construction Noise Compliance Assessment' by Marshall Day Acoustics (MDA) in accordance with Condition 18 of the permit. This report was reviewed by the Department of Planning and Community Development (DPCD) with expert assistance from SLR Acoustic Consultants Pty Ltd, and the Environment Protection Authority (EPA)
- 6 Following the advice in BMIN01076 you wrote to the proponent on 10 December 2010 outlining concerns and issues with the MDA post construction report
- 7 The proponent responded to you on 11 January 2011 with a supplementary MDA report. This report was also reviewed by DPCD assisted by SLR Acoustic Consultants Pty Ltd and the EPA. A number of site inspections of the Waubra Wind Farm have also been made by DPCD and EPA officers, who have raised concern about the likely presence of special audible characteristics (SACs) at some properties
- 8 The wind farm noise standard referenced in the permit conditions (New Zealand Standard NZS6808 1998, Acoustics - Wind Farm Noise) is primarily designed to protect night time sleep. Where SACs are identified the noise standard requires a 5 dBA penalty (or a 35 dBA noise limit)
- 9 The cause of SACs may be due to
 - a Mechanical noise due to maintenance and / or manufacturing issues with the particular model and components of the turbines, bearings and blades,
 - b Low frequency noise, impacted by turbine type, wake and turbulence effects from turbine spacing, synchronising turbines, local atmospheric conditions and terrain influences known as 'van den Berg Effect' (increased noise propagation and travel during inversion conditions in still, cold weather) and low housing insulation,
 - c Tonal noise, from an inherent design character, and / or maintenance or manufacturing flaws,
 - d Modulation noise, also known as Amplitude Modulation or blade swish, from the passing of the blades past the tower,
- 10 The proponent wrote to the Department on 18 July 2011 requesting a meeting to discuss any outstanding issues with the noise compliance reports

ISSUES

- 11 The nature of the noise complaints from property owners near the Waubra Wind Farm are detailed in two reports prepared by acoustic experts
 - a the Marshall Day Acoustics (MDA) post construction noise report commissioned by the wind farm operator, and
 - b the Report by Noise Measurement Services Pty Ltd commissioned by (a complainant)

- 12 The two reports indicate the likely presence of SACs, which may be occurring at different times from different sources and may be potentially overlapping. On the basis of the uncertainties in the supplementary MDA report, including the conclusions about SACs and the potential consequences for the marginal nature of compliance for a series of properties, DPCD and EPA remain concerned that noise compliance has not been achieved.
- 13 The background night time noise levels may also be inaccurate due to potential errors in wind speed calculation, (i.e. erroneous background noise levels may be linked to the Stepnell property, where on-site background noise assessment has not occurred and has been extrapolated from a remote site).
- 14 SLR Acoustic Consultants identified a number of limitations in the MDA post construction noise assessment report. These have been communicated to the wind farm operator, who has advised you that it has purchased two additional dwellings and made a commitment to operate the wind farm in noise management mode. Noise management mode allows certain turbines to be selectively modified to reduce rotation speed or to shut down turbines by sector.
- 15 These actions have not prevented the continuation of noise complaints and the Department considers that operating the facility in noise management mode will not enable the facility to meet the applicable 35 dBA noise limit.
- 16 DPCD has reviewed complainant information to identify the properties that are most affected by wind farm noise and the main times and meteorological conditions when wind farm noise is considered excessive by complainants. This information can be used to target times when SAC assessment should be carried out.
- 17 The following three properties are considered representative properties:
 - a Stud Farm Road: summer to late autumn with southwest winds, and worst during northwest winds, with low wind speeds / calm conditions at the house, but with the turbines still turning on the ridges.
 - b Lobbs Road: All year - bad with south winds, worst in a south-easterly, north winds particularly when turbines are not synchronised and are chopping up the air around each other, and on cold still nights at the house (low frequency noise inside the house) with the turbines still turning on the ridges.
 - c Quoin Hill Road: All year with south, southeast winds with southwest winds the loudest, also from the north to a lesser extent, low frequency noise inside the house during high wind speeds, mornings, evening, night time.

OPTIONS

- 18 In accordance with the conditions of compliance set out in the 2 Waubra permits, it is recommended that you take the following compliance pathway:

STAGE 1

- a Request the wind farm operator to
 - o commission independent targeted objective SAC assessment at a number of properties (including the three identified above), using assessment methods and within time frames approved by you, based on industry best practice and on the basis of the complaint descriptions, and
 - o submit to you an independent report on the findings and actions required to achieve compliance with the permit conditions.
- b Request the wind farm operator to provide all maintenance records, issues and actions, to identify if certain turbines are subject to recurring problems that could be generating excessive noise.
- c Request the wind farm operator to provide an updated complaint register, including all internal notes and follow up actions, including descriptions of complaint time, weather conditions, turbine operational issues at the time of the complaint and follow up procedures for each complaint.

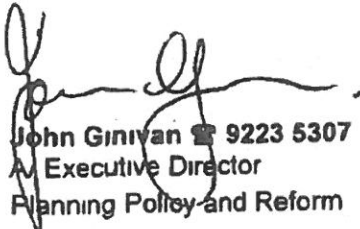
Note The operator may choose to refuse this request, at which stage EPA could be called on to order the internal documents via the head of power under the Environment Protection Act and you could then resolve to commission your own independent assessment as per Stage 2, below

STAGE 2

STAGE 3

CONSULTATION

19 This brief has been prepared in consultation with DPCD Legal, SLR Acoustic Consultants and EPA


John Giniyan ☎ 9223 5307
Executive Director
Planning Policy and Reform

Prue Digby ☎ 9208 3594
Deputy Secretary
Planning and Local Government



Minister for Planning

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Our Ref BMIN011632

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Level 1, 95 Coventry Street
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Dear

WAUBRA WIND FARM, PERMIT COMPLIANCE

I refer to my letter to you dated 10 December 2010 and your response dated 11 January 2011

The Waubra Wind Farm Planning permits, PL-SP/05/0150 and PL-SP/05/0152 were issued on 26 May 2005 by the Minister for Planning as responsible authority and specify compliance requirements for operational noise at conditions 14-18

In the attachment to this letter I outline my consideration of the information you have provided to date. At this time I am not able to reach a determination that the wind farm is compliant with the performance requirements specified

Accordingly, I require further analysis and reporting, as outlined in the attachment, to be completed and supplied to me as consistent with the timelines specified in the attachment

Should you have any queries about the matters I have raised, please telephone Mr John Phillips, Acting Director Planning Policy in the Department of Planning and Community Development on 03 9223 5344

Yours sincerely

MATTHEW GUY MLC
Minister for Planning
15.9.11

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