



Your reference: MP10\_0034  
Our reference: DOC13/21271: FIL11/7183  
Contact: Michael Heinze 02 6229 7002

Mr Neville Osborne  
Manager Energy Infrastructure Projects  
Department of Planning and Infrastructure  
GPO Box 39  
SYDNEY NSW 2001

Attention: Anna Timbrell

30 May 2013

Dear Mr Osborne

**Re: Preferred Project Report for the Crookwell 3 Wind Farm (MP10\_0034)**

I refer to an email received from Anna Timbrell on 23 April 2013 forwarding the Preferred Project Report for the proposed Crookwell 3 Wind Farm (MP10\_0034) ("PPR") and your invitation for the NSW Environment Protection Authority ("EPA") to review the PPR and provide comment. I apologise for the delay in responding.

The EPA has reviewed the PPR and believes that it adequately addresses the issues raised in the public submissions and in the EPA's previous submission (DOC12/45118: FIL11/7183) on the Environmental Assessment ("EA") submitted to the NSW Department of Planning and Infrastructure ("DP&I") on 13 February 2013.

In our previous submission, the EPA requested further information to ensure that the noise impacts of the proposal are equal to, or below, the relevant criteria derived the *Environmental Noise Guidelines: Wind Farms* SA EPA 2003 (the "ENG criteria"). The proponent has provided this additional information through the PPR.

The EPA has considered the additional information and is able to license the proposal subject to the noise limits contained in Attachment A to this letter. The EPA has not proposed noise limits at any receiver which is a host property for the proposal or for the existing Crookwell 2 wind farm, or which is proposed to have a Private Negotiated Agreement (PNA) with the proponent. Seven receivers (houses 19, 63 to 65 and 68 to 70) were predicted to exceed the ENG criteria of and the proponent has committed to using sector management or mitigated operation to meet the noise limits at these locations. While the EPA generally does not support the use of sector management to demonstrate compliance we note the proponent's commitment to meet the noise criteria and therefore the EPA's proposed limits at those receivers are reflective of the combined impact of noise from all Crookwell wind farms 1, 2 and 3.

Limits have generally been included where the predicted noise impact exceeds 35 dBA at any wind speed. However, house 70 was included as the proponent predicted that the contribution of the proposal at receiver 70 without mitigation would exceed the allowable Crookwell 3 contribution noise levels by up to 9.4 dBA, leading to potential cumulative (i.e. Crookwell 1, Crookwell 2 and Crookwell 3 combined) exceedence of the ENG criteria by up to 3 dBA. The proponent stated that it would address this impact using sector

management, which the EPA expects would involve shutting-down a number of turbines during certain meteorological conditions.

If the proponent is unable to meet the noise limits using sector management it may need to take further action to manage its impact on sensitive receivers, such as entering into PNA, architectural treatment of receivers or permanently disabling turbines. The actions required if the ENG criteria are not met using sector management and mitigated operation should be specified in any consent issued for the proposal.

The EPA has modified its proposed requirements for wind speed monitoring to occur at each closest wind turbine to each receiver. The EPA expects that this will account for potential local variability in wind speed across the premises better than monitoring wind speed at the proposed monitoring masts. However the EPA is willing to discuss possible alternative wind monitoring techniques with the proponent if required.

Thank you for the opportunity to provide comment on this matter. Should you wish to discuss this matter further, please contact Michael Heinze on 02 6229 7002.

Yours sincerely



**JULIAN THOMPSON**  
**Unit Head – South East Region**  
**NSW Environment Protection Authority**

## ATTACHMENT A – Noise Conditions

### Limit Conditions

**L6.1** Noise generated at the premises must not exceed the noise limits specified below. The locations referred to below are indicated in Table 6 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012).

a) Activities at the premises must be managed to ensure that noise generated at the premises does not exceed the noise limits in the table below:

		L <sub>eq(10 minute)</sub> NOISE LIMITS (dBA)				
Integer Wind Speed (m/s) at hub height		0 to 8	9 to 10	11	12	13 to cut-out
<i>House 58</i>		35	35	36	38	39
<i>House 59</i>		35	35	36	37	39
<i>House 62</i>	<i>Cottonwood</i>	35	35	36	38	40
<i>House 63</i>	<i>Rocky Corner</i>	37	39	41	43	45
<i>Any other</i>	<i>Any other residence not a wind farm host property or subject to a private negotiated agreement</i>	35	35	35	35	35

b) Activities at the premises must be managed to ensure that cumulative wind turbine noise, including from the premises as well as any other approved or operating wind farm, does not exceed the limits in the table below:

		L <sub>eq(10 minute)</sub> NOISE LIMITS (dBA)				
Integer Wind Speed (m/s) at hub height		0 to 8	9 to 10	11	12	13 to cut-out
<i>House 2, House 3, House 4, House 5, House 6, House 7</i>	<i>Bendemere, D'Ambrosio,  Emohruo</i>	35	35	35	36	38
<i>House 19</i>	<i>Wombat Hollow</i>	35	35	37	38	38
<i>House 60, House 61</i>	<i>Pejar Park, Wallarobie</i>	35	35	36	38	40
<i>House 64, House 65</i>	<i>Balvardarman Hill, Windalee</i>	35	36	38	41	43
<i>House 68, House 69, House 70</i>	<i>Meadowvale, Atholvale, Snowgum</i>	35	35	35	38	40

**L6.2** For the purposes of Condition L6.1, wind speed is to be measured directly in accordance with the most recent version of Chapter 7 of *International Standard IEC 61400-11 Wind turbine generator systems – Part 11: Acoustic noise measurement techniques* (IEC 2002) by electrical power output and a nacelle-mounted anemometer at the following locations:

- For Houses 2 and 3 – Turbine A26 as shown in Figure 4 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012);
- For House 7 – Turbine A28 as shown in Figure 4 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012);
- For House 19 – Turbine A32 as shown in Figure 4 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012);
- For Houses 58 to 62 – Turbine A23 as shown in Figure 4 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012);
- For Houses 63 to 65 – Turbine A6 as shown in Figure 4 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012); and
- For Houses 68 to 70 – Turbine A1 as shown in Figure 4 of the document *Crookwell 3 Wind Farm Noise Impact Assessment* by SLR Consulting Australia Pty Ltd (30 August 2012).

**L6.3** To determine compliance:

a) with the  $L_{eq(10 \text{ minute})}$  noise limits in condition L6.1, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 20 metres or less from the property boundary closest to the premises; or
- within 20 metres of a dwelling façade, but not closer than 5m, where any dwelling on the property is situated more than 20 metres from the property boundary closest to the premises.

b) with the noise limits in condition L6.1, the noise measurement equipment must be located:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by condition L6.3(a).

**L6.4** A non-compliance of condition L6.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by conditions L6.3(a) and L6.3(b); and/or
- at a point other than the most affected point at a location.

**L6.5** For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the *Environmental Noise Guidelines: Wind Farms* (SA EPA 2003) must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.