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## **Maralla West Wind Energy Facility : Acoustic Impact Assessment: Peer Review**

### 1. Introduction

This document is a peer review of an acoustic impact assessment report for the Maralla West and Maralla East Wind Energy Facility of Biotherm Energy Pty Ltd. The report is compiled by WSP / Parsons Brinckerhoff.

The findings of this Acoustic Impact Assessment: Peer Review are summarised as follows:

- a. Daytime and night-time noise monitoring of existing noise climate is inadequate.
- b. There are calculation errors of a minor nature in the document.
- c. Noise contour plots are inadequately labelled.
- d. The evaluation of the noise impact on one farmhouse is incorrect.

## 2. Detailed Examination Of Acoustic Impact Assessment Document

- a. To determine the existing residual level reference should be made to para 5.1.6.2 of SANS 10103. From this it can be seen that at every receptor/farm house at least a 24-hour measurement should be made of noise levels. It will be further prudent to break up the measurements into averages over 10 minutes and to present these graphically with the 24-hour measurement. It is not accurate to do measurements lasting less than 24 hours.
- b. Ad Para: Existing Noise Climate
  - i. It is evident from Table 10 (page 29) that the details of item (iii) above have been ignored. The table lists measurements made at farmhouses 1, 2, and 3.
    - The measurements are taken at three times during the day. No indication is given how long the measurements were taken for. This is inadequate for the measurement of residual levels.
    - In the column headed LAeq a value is given. The term LAeq is the equivalent continuous sound pressure level over a period of time. There is no indication of what period of time applied to the measurements.
    - Refer to para 5.1.4 and 5.1.6.2 of SANS 10103.
    - In the column headed LA90 a daytime average is given. For all measurements at farmhouses 1, 2 and 3 the average is incorrectly calculated - the averages have been calculated as arithmetical averages when in fact they should be calculate as logarithmic averages. For example the average value for farmhouse 3 is given as 28.2 dB whereas the correct value is 30.6 dB.

- ii. By not calculating a correct value for LAeq it is impossible to proceed with analysis of the effect of the noise on the farmhouses.
  - iii. On page 26 the last paragraph indicates that "sound level monitoring could not be undertaken during the night-time timeframe" due to "safety considerations at the night". One presumes that since the measurements were made at farmhouses and that a farmhouse is a reasonably secure location it should be quite easily possible to undertake night-time monitoring. It would simply be a matter of installing the sound level meter at the farmhouse and sitting at a record for a night with collection and download of data the following day. It is almost inconceivable that a noise Impact assessment can be undertaken without data for night-time or, more importantly, early morning.
- c. Ad para 4 : Findings
- i. On none of the noise contour maps showing noise levels at given wind speeds is the windspeed direction given.
  - ii. In Table 14 it is recorded that the sound pressure level at night can increase by 14.8 dBA over the ambient noise levels. This is a significant increase the report states that this "*indicates a worst-case, using the lowest monitored background levels in the area. Should the ambient noise levels be higher than this in reality, the expected increases will diminish.*" The report further states "*additionally it is understood that the farmhouse belongs to one of the landowners who is in support of the Proposed Project.*"
  - iii. The statements contained in (ii) above are misleading. It is common cause that the limit for a disturbing noise is 7 dBA above ambient noise levels. However to state that it is a "worst-case" using the lowest monitored background levels" is false: apart from the fact that the monitoring of noise levels is defective (see (iii) above) it is a simple fact that with the sole exception of one reading taken on

13 April 2016 at 22:09 there are no monitored background noise levels taken at night.

Quite obviously if ambient noise levels increase the "expected increases will diminish". However the would have to increase by ~ 7 dBA for the noise not to be a disturbing. This is a significant increase and one that is unlikely to occur in a rural environment.

The fact of the farmhouse belongs to a person who is not going to complain about noise does not relieve the responsibility of ensuring that the occupant is not subjected to a "disturbing noise". This should be addressed in recommendations..

Yours sincerely,

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