

Burrendong Wind Farm Amendment Report

APPENDIX E.1

Noise and Vibration Impact Assessment (NVIA)
Addendum - Wanda Vale



1 May 2024

Eco Logical Australia
Unit 1, Level 1
79 Market Street
Mudgee NSW 2850

Attention: Daniel Magdi

WANDA VALE FARM STAY

Dear Daniel

Marshall Day Acoustics Pty Ltd (MDA) has provided extensive acoustic services for Burrendong Wind Farm (the Project), including a detailed assessment of noise, summarised in MDA report Rp 002 r02 20200219 - *Burrendong Wind Farm - EIS Noise Assessment* (EIS Noise Assessment), dated 15 September 2023.

Eco Logical Australia (ELA) has subsequently advised that since the lodgement of the EIS Noise Assessment for the Project, Mid-Western Council has approved a farm stay accommodation at Wanda Vale, 772 Black Willow Road, Hargraves.

The farm stay is therefore in close proximity to a number of wind turbines associated with the Project. On this basis, NSW Department of Planning, Housing and Infrastructure (DPHI), the delegated consent authority for the Project, has requested that noise impacts be evaluated at this location.

This letter provides the results of additional noise assessment specific to the Wanda Vale farm stay, conducted by MDA.

Noise modelling method and input parameters

The noise modelling is identical to that documented in the EIS Noise Assessment, including:

- Noise prediction method and inputs; and
- Candidate wind turbine model and associated source noise data.

The existing noise model has therefore simply been updated to include a receiver location representing the Wanda Vale farm stay.

Based on information contained in the Development Application Planning Assessment Report¹ the co-ordinates for the farm stay as detailed in Table 1 have been adopted for assessment. The receiver is considered to be a non-associated receiver.

Table 1: Receiver co-ordinates for Wanda Vale Farm Stay: GDA2020 MGA zone 55

Receiver	Easting, m	Northing, m
Wanda Vale Farm Stay	718,109	6,374,087

¹ DA0044-2024 Assessment Report, Mid-Western regional Council, dated 16 August 2023

Noise limit

At non-associated receivers, the applicable noise limit in accordance with the NSW Noise Assessment Bulletin² is 35 dB L_{A90} or background L_{A90} + 5 dB, whichever is higher.

In the absence of background noise levels measured at this location, and to provide a conservative assessment, the base noise limit of 35 dB L_{A90} has been adopted for assessment.

Predicted noise level

Table 2 presents the predicted A-weighted wind turbine noise levels at Wanda Vale Farm Stay, and an assessment of compliance with the applicable noise limit.

Table 2: Predicted wind turbine noise level at Wanda Vale Farm Stay, db L_{Aeq}

Receiver	Predicted noise level	Noise limit	Compliance?
Wanda Vale Farm Stay	47.4	35	✗ (+12.4)

As shown above, due to the proximity of the Wanda Vale Farm Stay accommodation to the Project, predicted noise levels are indicated to be 12.4 dB above the base noise limit for non-associated receivers.

Curtailement strategy

An example curtailment strategy has been developed to demonstrate compliance with the base noise limit adopted for the Wanda Vale Farm Stay.

Based on instruction from ELA the curtailment strategy considers deletion of wind turbines only and does not consider more sophisticated configurations that may incorporate alternative, noise reducing operational modes for wind turbines.

Table 3 provides predicted noise levels for the Wanda Vale Farm Stay receiver, with the nearest wind turbines to the receiver progressively removed from assessment.

Table 3: Predicted noise levels at Wanda Vale Farm Stay - wind turbine removal curtailment strategy, db L_{Aeq}

Wind turbines to be removed	Predicted noise level	Noise limit	Compliance?
70	37.4	35	✗ (+2.4)
70, 69	32.3	35	✓

The example curtailment strategy presented above is only one of the many configurations possible to achieve the required noise reduction. If required, a detailed curtailment strategy accounting for both wind speeds and wind directions can be specified during detailed design once the Project has been approved, the layout finalised, and the wind turbine model selected.

² NSW Department of Planning and Environment (now under the purview of DPHI) *Wind Energy: Noise Assessment Bulletin* dated December 2016

Summary

The above assessment demonstrates that wind turbine noise levels associated with the Project are predicted to achieve compliance with the applicable base noise limits specified in the NSW Noise Assessment Bulletin, provided appropriate curtailment strategies are employed.

We trust this information is satisfactory. If you have any further questions, please do not hesitate to contact us.

Yours faithfully

MARSHALL DAY ACOUSTICS LTD



Alex Stoker

Associate and Renewable Energy Sector Lead