Department of Planning, Housing & Infrastructure

Our ref: SSD-10461

Mr Stephen Barry
Planning Director
Independent Planning Commission NSW
Via email

28/05/2025

Subject: Valley of the Winds Wind Farm – Request for Further Information

Dear Mr Barry

I refer to the email dated 20 May 2025, seeking additional information on the proposed Valley of the Winds Wind Farm (Project) for consideration by the NSW Independent Planning Commission (Commission). The Department's response to the Commission queries relating to the Valley of the Winds Peer Review – EIS Noise Assessment (Peer Review), dated 11 October 2022 can be found below.

1: The Commission Panel requests that the Department please provide its consideration of the Peer Review's statements relating to section 3.1 of the Applicant's Noise Impact Assessment (NIA) concerning ground absorption conditions.

The Valley of the Winds Peer Review – EIS Noise Assessment Peer Review undertaken by Octave Acoustics raised queries in relation to the ground absorption factor presented in the Valley of the Winds Wind Farm Noise and Vibration Impact Assessment (NVIA) (undertaken by Marshall Day Acoustics) and also makes a comparison to the Liverpool Range Wind Farm noise assessment.

There is a complex history of the relevant noise assessment guidelines that applied over time in NSW that is relevant to this discussion and the different assessment methods referenced.

At the time of the assessment of the Valley of the Winds Wind Farm, the relevant NSW guideline for assessment was the *NSW Wind Energy: Noise Assessment Bulletin* (2016) (2016 Noise Bulletin). This guideline adopted the 2009 South Australian EPA Wind Farms environmental noise guidelines (2009 SA Guidelines). Although the NVIA was completed in 2022 and 2009 SA Guidelines were updated in 2021, the NVIA correctly assessed the project in accordance with the 2016 Noise Bulletin and the 2009 SA Guidelines that were specified in that guideline and not the 2021 version assumed within the Peer Review. Although not relevant to this discussion, the Department notes that the most recent *NSW Technical Supplement for Noise Assessment* (2024) (2024 Technical Noise Supplement) now references the 2021 SA Guidelines.

The NVIA included a conservative ground absorption allowance in accordance with the Institute of Acoustics (IOA) 2013 document *A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise*. This conservative assumption is more than is required by

the 2009 SA Guideline or the 2016 Noise Bulletin. The Peer Review however assumes it was a requirement.

The Peer Review references the Liverpool Range Wind Farm assessment by SLR. The noise assessment of the Liverpool Range Wind Farm was prepared in 2014 which was before the 2016 Noise Bulletin but was undertaken in accordance with the SA 2003 noise guidelines which were the recommended guideline in NSW at the time. The SLR report adopted a G = 0 hard ground impedance factor but notes this was a conservative approach at the time, but it was not a mandatory approach under the applicable guidelines. Importantly, SLR did not apply an allowance for the recommendations of the IOA report.

The Department considers that the use of a ground impedance factor of G = 0.5 for the Valley of Winds Wind Farm is acceptable when additional conservative factors such as those outlined in the IOA document and the 2016 Noise Bulletin are also considered.

Therefore, while the ground absorption factor is less conservative in the Valley of the Winds noise assessment, the noise modelling approach overall was a more conservative approach than was required.

It should be emphasised that the Department sets performance criteria that must be met and validated under reasonable worst-case scenarios. Additionally, conditions of consent require contingencies by way of noise curtailment to ensure acceptable levels are able to be met by an operating wind farm. The Department considers that the NVIA addressed applicable requirements and that the Department's recommended conditions would ensure acceptable noise levels for the operation of the Valley of the Winds Wind Farm.

2: The Commission Panel requests that the Department please provide its consideration of the Peer Review's statements relating to section 5.3 of the NIA concerning low-frequency noise.

The requirement to assess low frequency noise is not included within the 2016 Noise Bulletin nor the 2009 SA Guidelines as it is known that excessive low frequency noise is not a feature of modern wind turbines. The 2016 Noise Bulletin provides guidance by way of a screening objective of 60 dBC as follows:

The presence of excessive low frequency noise that is a repeated characteristic [i.e. noise from the wind farm that is repeatedly greater than 60 dB(C)] will incur a 5 dB(A) penalty, to be added to the measured noise level for the wind farm, unless a detailed low frequency noise assessment to the satisfaction of the Secretary demonstrates compliance with the proposed criteria for the assessment of low frequency noise disturbance (UK Department for Environment, Food and Rural Affairs (DEFRA, 2005)) for a steady state noise source.*

It is not considered that a low frequency noise level of 60 dBC would trigger the DEFRA objectives to be exceeded. A level of around 65 dBC from a wind farm would likely be required to trigger the DEFRA objectives.

Although not relevant to this assessment, the wording in the 2024 Technical Noise Supplement provides some additional clarification in that it confirms that 60 dBC is only a screening tool, particularly in the statement, "*In the unlikely event that excessive low-frequency noise is a repeated characteristic…..*"

It would therefore have been inappropriate for the NVIA to include an additional 5 dB penalty for low frequency noise, or to have needed to undertake additional assessment of low frequency noise, when it had not triggered the screening criteria (to increase low frequency by even 3 dB would require a doubling of sound power (i.e. twice as many turbines impacting the noise level)).

It should be noted that low frequency noise impacts require architectural consideration of the affected building and ultimately the testing for low frequency noise can only be accurately undertaken after a wind farm has been constructed. Low frequency noise can be assessed during validation measurements, if required.

Conclusion

This additional information has been provided to the Commission for consideration in assessing and determining the Project.

Thank you for the opportunity to provide this additional information regarding the Project.

If you wish to discuss the matter further, please contact Nicole Brewer on (02) 9274 6374 or nicole.brewer@planning.nsw.gov.au.

Yours sincerely,

Nicole Brewer
Director
Energy Assessments