



Summary Sheet – Noise

This is a Summary Sheet on the Preliminary Noise Assessment (PNA) which is available in full at <https://osmi.com.au/planning/>. At the end of the document are visual charts that show the noise level contours. These are also available in the full PNA.

Methods

The PNA is based on the current proposed wind farm layout comprising 35 turbines (subject to final design changes) and associated site infrastructure. The planning application for the wind farm will seek permission to develop turbines with a maximum tip height of 250m. The actual turbine would be determined at a later stage in the project based on a range of design requirements including achieving compliance with the planning permit noise limits.

In order to guide the next level of layout design, the PMA considers a ‘candidate turbine model’ that is representative of the size and type of turbine which could be used at the site. The Vestas V162, which is 5.6MW, with a hub height of 160m and a rotor diameter of 162m, has been selected for this purpose. Two different types of blade design are available; a standard non-serrated version and a serrated version which reduces the total noise emissions of the turbine. These two different blade configurations are referred to as ‘sound modes’ and both are modelled in this assessment

Manufacturer specification data which provides noise emission data in accordance with the international standard, has been used as the basis for the assessment. As the PMA was undertaken in advance of localised background noise monitoring, a simplified and conservative approach has been adopted for the preliminary assessment by comparing the predicted noise levels with the base noise criteria presented below in Table 4.

Table 4: Applicable noise criteria

Land Zoning	Noise criteria, dB LA90
Farming Zone	40 dB or background LA90 + 5dB, whichever is higher
Rural Living Zone	35 to 40 dB* or background LA90 + 5 dB, whichever is higher

*subject to further planning guidance and site studies

Results

The results of the PNA for Delburn Wind Farm demonstrates that the predicted noise levels for the proposed turbine layout and candidate turbine model achieve the noise limits. This is determined in accordance with NZS 6808:2010 at all neighbouring noise sensitive receiver locations, as shown in Figures 6 (non-serrated blades) and 7 (serrated blades). The assessment also demonstrates that there is no clear relationship between the size of the turbine (rotor diameter) and the noise output.

Next steps

Background noise monitoring is being conducted at 10+ sites as part of the next stages of the planning process. This will then be used to derive localised background noise limits and inform the final design. Once the final design is complete (and number of turbines confirmed), the PNA will be updated prior to planning permit application in 2020 and made available on the OSMI website.

Figure 6: Highest predicted noise level contours – Vestas V162-5.6MW Mode 0-05



Figure 7: Highest predicted noise level contours – Vestas V162-5.6MW Mode 0

