

Western Plains Wind Farm

Noise Information Sheet

June 2021

Wind turbine noise can be accurately predicted and the assessment procedures, methodology and limits are prescribed by state planning authorities.

Modern turbines include new technology aimed at reducing noise, for example serrated blade tips that reduce the aerodynamic sound at the fastest part of the blade.

A comprehensive technical noise assessment involving predictive modelling is required by the Environment Protection Authority (EPA) Tasmania for the project's Development Proposal and Environmental Management Plan (DPEMP). It requires monitoring background noise levels for various wind speeds at sensitive locations, predicting noise levels from proposed wind turbine locations and assessing the noise associated with the operation of the full wind farm in accordance with the New Zealand Standard 6808:2010 *Acoustics – Wind farm noise* (NZS 6808:2010).

The noise limit at any non-involved residence is generally specified to be the higher of 40 dB(A) or the background level plus 5 dB for any wind speed. The exception is for areas where a "high amenity limit" may be considered warranted and a 35 dB(A) base limit should be considered. See diagram below for familiar sounds for reference. Compliance with the limits must be demonstrated using predictions before planning approval can be granted and the wind farm is subject to post construction audit to ensure operational compliance.

The Australian Energy Infrastructure Commissioner (formerly National Wind Farm Commissioner) notes in his last annual report (2019) that although the number of wind farm projects is increasing complaints about operating wind farms are in decline, with only five lodged in 2019. This suggests that concerns about noise diminish after a project commences operation.

The noise assessment for Western Plains Wind Farm has been undertaken by leading acoustic consultants Marshall Day Acoustics. It shows that the project is compliant and that the noise levels at all residences outside of the wind farm would comply with the most

"The available Australian and international evidence does not support the view that the infrasound or low frequency sound generated by wind farms, as they are currently regulated in Australia, causes adverse health effects on populations residing in their vicinity. The infrasound and low frequency sound generated by modern wind farms in Australia is well below the level where known health effects occur, and there is no accepted physiological mechanism where sub-audible infrasound could cause health effects."

Australian Medical Association
AMA Position Statement – Wind Farms and Health (2014)

"After careful consideration and deliberation of the body of evidence, NHMRC concludes there is currently no consistent evidence that wind farms cause adverse health effects in humans."

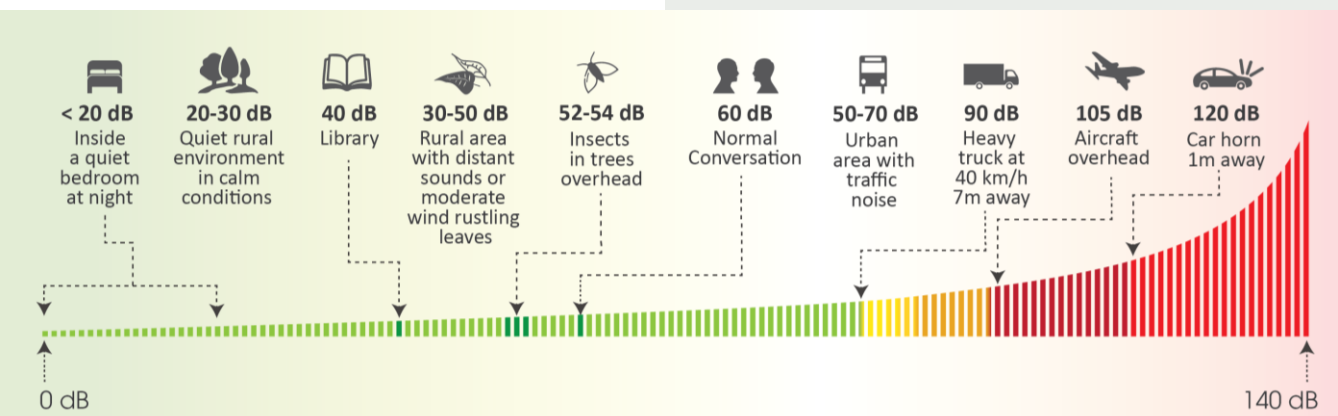
National Health and Medical Research Council
NHMRC Statement: Evidence on Wind Farms and Human Health

stringent applicable noise limit. The maximum predicted noise level in the nearest residential area of Stanley is 20-25dB, similar to the lowest background noise levels measured in the vicinity of the project.

The assessment will be included in the DPEMP and after this has been accepted by the EPA it will be put on public exhibition.

Marshall Day Acoustics

Established in 1981 Marshall Day Acoustics is a leading specialist acoustic consultancy. The company's expertise includes environmental acoustic assessments of energy infrastructure and the team have extensive experience in the measurement, prediction and assessment of wind farm noise. The company's Wind Farm Working Group performs ongoing review of local and international guidance and research, to ensure highest standard of accuracy and reliability in noise impact assessment.



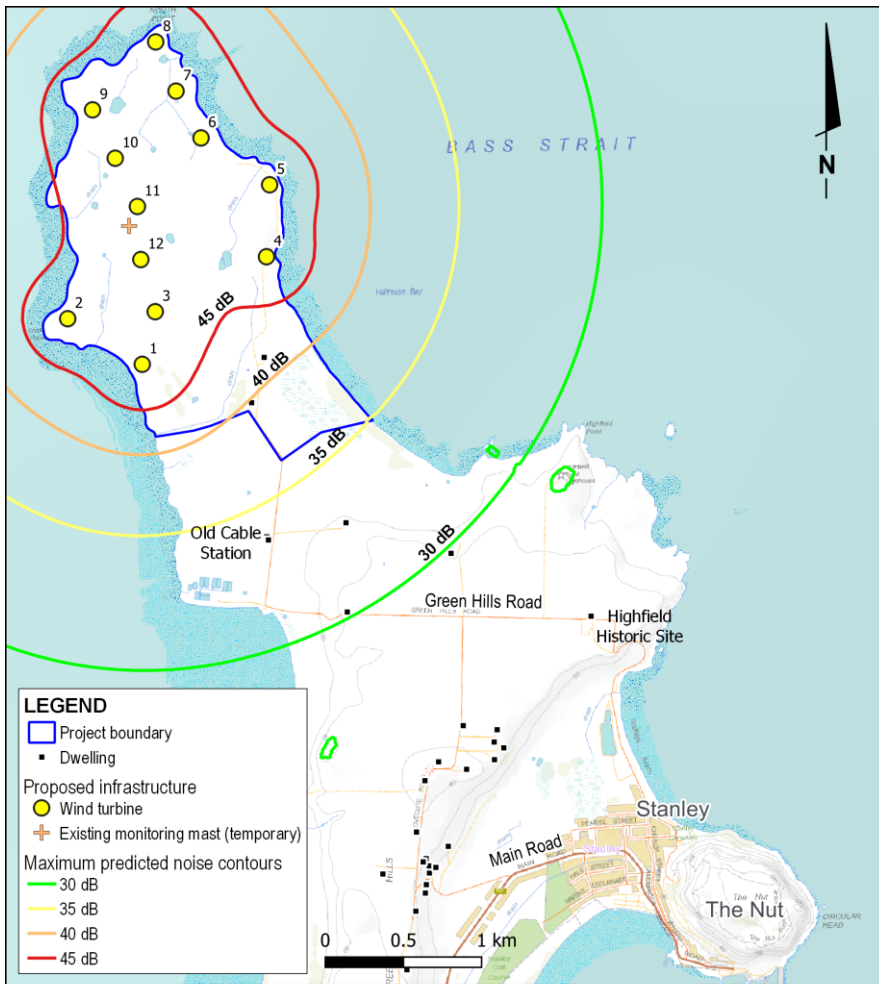
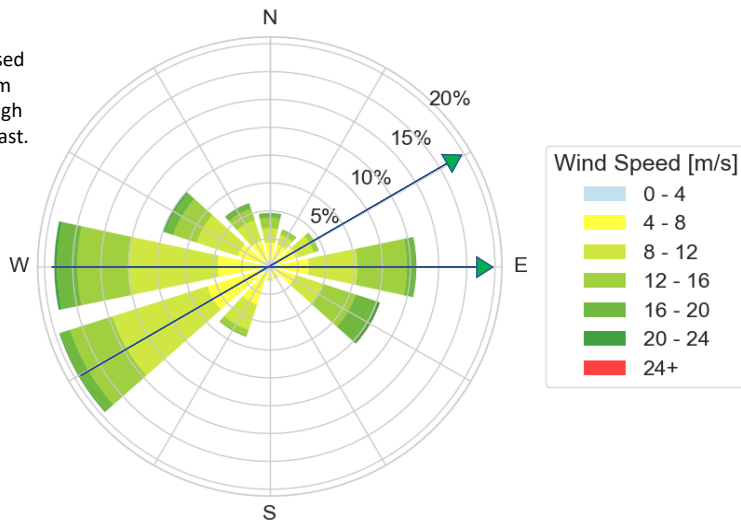


Figure 1:
Wind rose based
on results from
onsite 80 m high
monitoring mast.



The map above shows the noise contours for maximum predicted noise levels based on the turbine model (V136 4.2MW) likely to be chosen for the project and hub height wind speeds of 9 m/s (32.4km/h) or greater. The proposed wind turbine hub height is 82 m.

Figure 1 shows the distribution of wind speeds and directions recorded at 80 m by the onsite wind monitoring mast. Wind direction is the direction from which wind originates. The dominant wind direction at the site is Westerly to South Westerly, blowing from W, W-S-W to E, E-N-E, as shown.

Scan QR codes for direct access

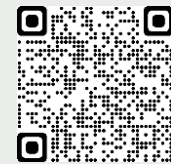
National Health and Medical Research Council, *Information Paper: Evidence on Wind Farms and Human Health (2015)*
tinyurl.com/yt7ftz52



Australian Medical Association
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ama.com.au/position-statement/wind-farms-and-health-2014



Independent Scientific Committee on Wind Turbines, *A Review of the Potential Impacts of Wind Turbine Noise in the Australian Context (2020)*
link.springer.com/content/pdf/10.1007/s40857-020-00192-4.pdf



The Australian Energy Infrastructure Commissioner - Health matters
nwfc.gov.au/observations-and-recommendations/health-matters



Victoria Health, *Wind farms, sound and health: community information*
tinyurl.com/27et89zf



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