

Palmer Wind Farm

Fact Sheet
November
2023

Construction & Operational Noise Fact Sheet



The Palmer Wind Farm would help reduce Australia's carbon footprint by generating up to 288 MW of clean energy when constructed. That's enough to power up to 144,000 South Australian homes. The project will also bring investment and benefits focused on the surrounding community.

Recent advances in turbine technology mean we can significantly reduce the Project area with fewer, taller turbines and bigger setbacks from existing dwellings. This change would more than halve the number of turbines required and reduce the Project area by over 5,000 hectares.

This factsheet summarises the construction and noise assessments for the Project. These assessments found the Varied Project is expected to meet the required noise levels at neighbouring dwellings.

The Approved Project

The Palmer Wind Farm Project first received Planning Consent in December 2015 for up to 114 wind turbines. In 2019, the Project was authorised to proceed with up to 103 wind turbines.

Tilt Renewables is proposing to lodge a Variation Application pursuant to the Planning, Development and Infrastructure Act 2016 to amend the approved Project. This Variation Application is seeking to reduce the Project to 40 wind turbines and increase the maximum blade tip height to up to 220m.

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What is wind turbine noise?

Wind turbines create a relatively weak but characteristic noise. The noise is mainly generated by the movement of the blades through the air, producing a swishing sound. The mechanical components within the turbine can also create noise.

Noise Regulations

Noise regulations are in place to protect the wellbeing and amenity of the community. Noise regulations consider two types of dwellings:

- **Associated dwellings:** host landholders, being landholders providing access during construction or operation of the Project
- **Non-associated dwellings:** owners or occupiers who do not have a financial agreement with the Project

South Australia assesses noise from wind farms against the Wind Farms Environmental Noise Guidelines (November 2021).

The Guidelines require noise at a non-associated dwelling to not exceed the higher of:

- 35 dB(A) in Rural Living Zones, or
- 40 dB(A) in other areas, including Rural Zones or
- the background noise (LA90,10) by more than 5 dB(A).

Note, all neighbouring dwellings are within Rural Zones and subject to the 40 dB(A) criteria. Associated dwellings are also subject to a higher noise limit of 45 dB(A).

These noise levels apply for both day and night.

What operational noise should I expect?

Figure 1 provides the expected noise levels for the Varied Project.

It shows that the Varied Project is expected to meet the required noise limits at all non-associated dwellings. This will be achieved by ensuring adequate setbacks from the wind turbines and ancillary infrastructure (e.g. wind farm substations). Further, the significant reduction in the number of wind turbines proposed as part of the Varied Project reduces the potential noise impacts on dwellings in areas where wind turbines have been removed.

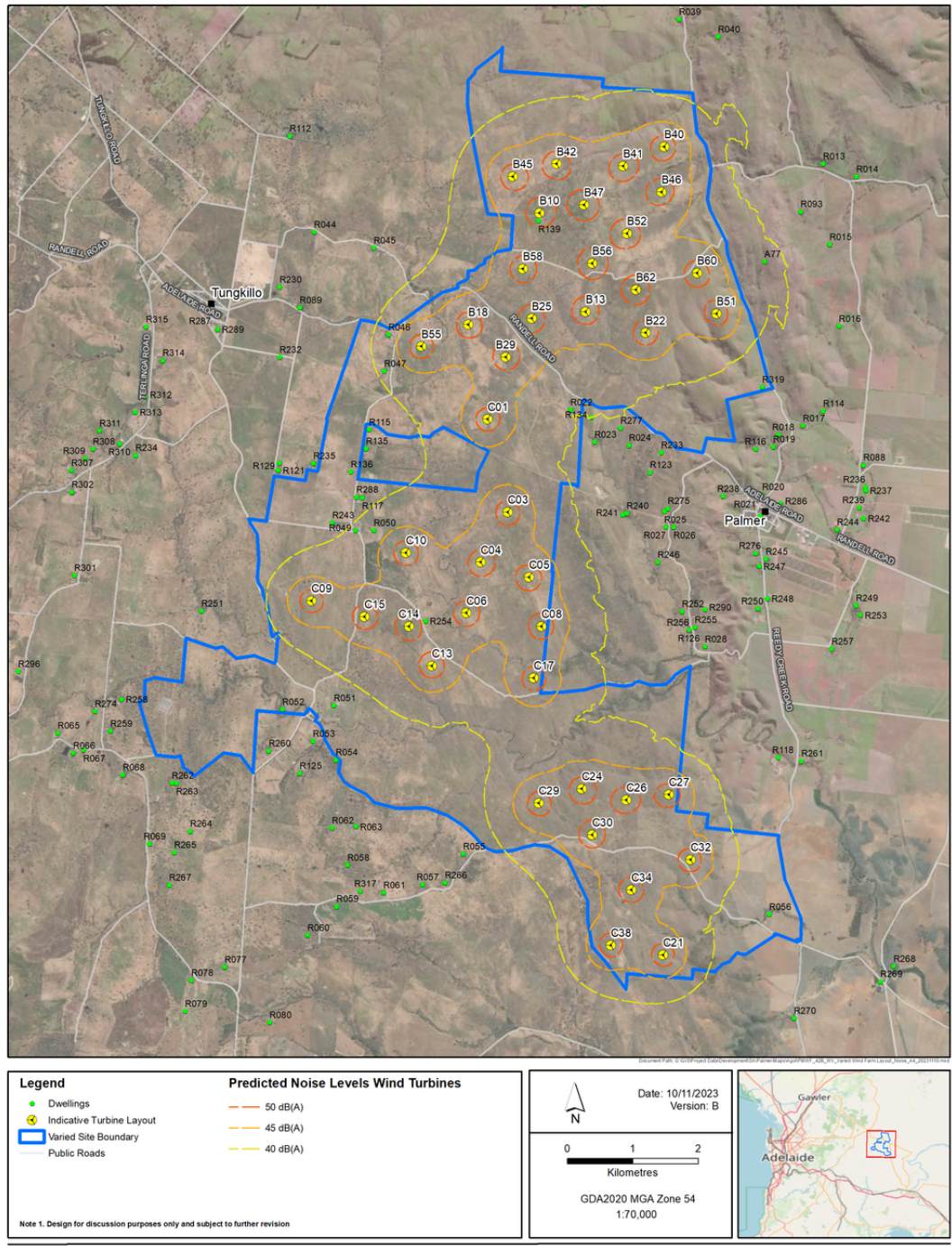
Table 1 illustrates the sound levels.

Table 1 - Example Sound Levels

dB	Sound Source
140	Jet engine at 30m
130	Rivet hammer (pain can be felt at this threshold)
120	Rock drill
110	Chain saw
100	Sheet-metal workshop
90	Lawn-mower
85	Front-end loader
80	Curbside heavy traffic lathe
70	Loud conversation
60	Normal conversation
30	Whispering
0	Hearing threshold

Source of tables: Safework Australia, 2015

Predicted Turbine Noise Levels (Varied Project)



Palmer Wind Farm
Predicted Turbine Noise Levels



Figure 1: Predicted Turbine Noise Levels (Varied Project)

The operational noise assessment uses a combination of background noise monitoring from the Approved Project and further background noise monitoring undertaken in 2023.

How do you confirm the predicted noise impact?

The noise assessment modelled operational noise using a modern wind turbine. Prior to construction of the Project and upon selection of the wind turbine for the Project, Tilt Renewables will review the noise assessment to ensure the Project can meet the required noise levels.

On the commencement of operations, the Project will also undertake further noise testing as part of an Operational Noise Management Plan. This testing will need to demonstrate the Varied Project can achieve the relevant noise levels in consultation with the relevant approval authority and the Environment Protection Authority.

We have also commenced background noise monitoring to establish a baseline prior to construction of the wind farm, represented in Figure 1.

During operations, we will also monitor operational noise and respond to any noise related concerns or enquiries. This will be done in accordance with Tilt Renewables' Complaints Handling Procedure and the Project-specific complaints procedure.

If unintended and undue noise impacts are identified during turbine operations adaptive management measures may be considered to mitigate or remove the noise impact.

Construction noise

The Varied Project would generate a similar level of construction noise to the Approved Project, with the required construction activities for the wind farm described in the original Development Application.

Construction noise is regulated differently to operational noise as it is temporary in nature and controls may be implemented to reduce the noise generated by work practices.

We will work with the community to reduce the disturbance construction noise could cause, including consideration of the work schedule, location of fixed noise sources, controls of noise generating plant and equipment. We will also continue to engage with the community throughout construction, to keep them updated on the schedule of works.

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