May 2023

# THE PLAINS RENEWABLE ENERGY PARK

# NOISE IMPACT FACTSHEET

Management of potential environmental impacts such as noise, is essential to protect the social surroundings and the amenity of the community surrounding the Project.

## WHAT IS NOISE?

Noise consists of sounds that travel through the air as a series of waves, which are measured in decibels (dB) and is characterised according to loudness (amplitude) and pitch (frequency). The sound made by wind turbines is measured using a decibel 'A' rating (dBA). dBA captures the human range of hearing but excludes sound outside that range.

## NOISE AND WIND TURBINES

Wind turbines make sound as the rotor blade spins through the air and from moving parts rotating within the turbine.

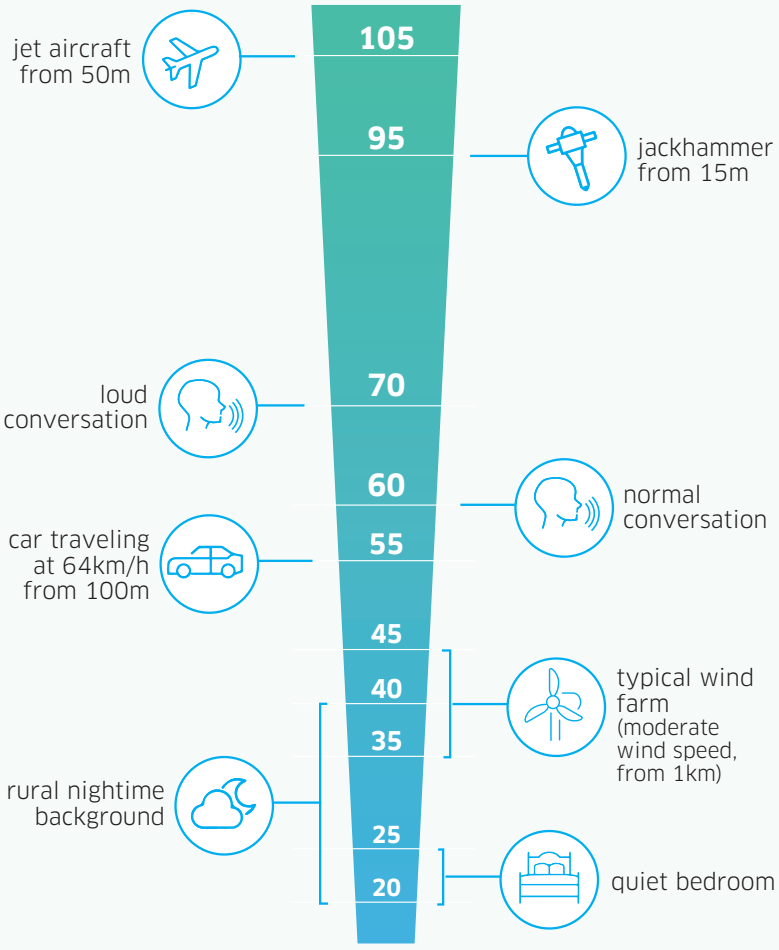
The noise produced by a wind turbine will depend on a number of variables including:

- how far the receiver is from the wind turbine
- the presence of any barriers
- wind direction and speed
- topography of the landscape
- level of background noise.

The sound level of a typical wind turbine (operating at moderate wind speed) from 500m to 1km away is around 35 to 45 decibels as shown in the infographic opposite.

## Environmental sounds and their typical sound levels (dBA)

The sound level of a typical wind farm (operating at moderate wind speed) from 500m to 1km away is around 35 to 45 decibels.




**Infographic sources:**

The Victorian Government Department of Health and Human Services, *Wind farms, sound and health*, (May 2013)

Safe Work Australia, *Infographic: Noise hazards and sound levels*, (March 2022)

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## NOISE COMPLIANCE LIMITS

In New South Wales, the limit for continuous wind turbine  sound outside a dwelling is 35 dBA for landowners who do not have an executed agreement in place with a developer and 45 dBA for landowners with an executed agreement in place as outlined in the Wind Energy Noise Assessment Bulletin published in November 2016 (https://www.planning.nsw.gov.au/-/media/Files/DPE/Bulletins-and-Community-Updates/wind-energy-noise-assessment-bulletin-2016-12.pdf).

## NOISE ASSESSMENT FOR THE PROJECT

A preliminary noise assessment conducted by environmental consultants, ERM, for the proposed wind turbine locations was modelled in 2022 using noise modelling software to predict worst case noise levels. The assessment identified 15 receptors where the predicted noise levels ranged from 12 to 19 decibels for dwellings that do not have an agreement in place. This result is 16 decibels lower than the allowed limit of 35 decibels at dwellings.

As part of the Environmental Impact Statement (EIS) process, ENGIE will install background monitors located within eight kilometres of the project area, at dwellings selected by accoustic specialists, Sonus. Sonus is a member of the Association of Australian Acoustical Consultants (AAAC), a not-for-profit peak body representing professionals with acoustic expertise that offer unbiased and practical advice and assessments. The monitors will record the background noise at each dwelling over a six to eight week period. Following the monitoring period, ENGIE will compare the expected worst case noise levels assessed in the project noise model with the recorded background noise at the dwelling.

Noise levels at all receptors within the project area will be further assessed in a detailed noise impact assessment as part of the EIS which will predict the expected noise output of the wind turbine once operational.

At ENGIE we recognise the value of open and transparent conversations with local community members. If you have any questions about the The Plains Renewable Energy Park project, please contact the team:

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