

Hexham Wind Farm

FACT SHEET

Noise and Vibration

The proposed Hexham Wind Farm is located between Hexham, Caramut and Ellerslie in the Moyne Shire in south-west Victoria. If approved, the Project would incorporate up to 106 wind turbines with an approximate height of up to 260 metres from ground to blade tip. The proposed Project also includes an on-site terminal station and Battery Energy Storage System (BESS) and other associated infrastructure.

As part of the Victorian Government's planning and approvals process for major projects, Wind Prospect is preparing an Environment Effects Statement (EES) for the proposed Hexham Wind Farm. An EES is a requirement under the *Environment Effects Act 1978* and includes a detailed assessment of a wide range of environmental and social assessments such as biodiversity, ecology, historical heritage, Aboriginal cultural heritage, landscape and visual amenity, traffic and transport, noise, socioeconomic and surface and groundwater.

To complete the assessments, considerable research and consultation is being undertaken to avoid and mitigate any potential adverse effects on the environment and the social fabric of the community during construction, operation and decommissioning of the proposed Project. Wind Prospect recognises the value of the natural and built environment in which the proposed Project is based and understands and respects the community's desire to protect both the environmental and social landscape that has existed for many years.

Assessment

As part of the EES, a noise and vibration assessment is being finalised in line with the Victorian Ministerial guidelines for the assessment of environmental effects, noise and vibration guidelines for developments in construction, and other relevant legislative and regulatory requirements.

The assessment aims to demonstrate how potential noise and vibration impacts on sensitive receivers will be appropriately identified, managed and mitigated during the construction, operation and decommissioning of the proposed Project.

Understanding noise and vibration

Noise can be described as what a person hears and vibration as what a person feels.

Noise is typically defined as a sound that is unwanted or disruptive and is measured in decibels (dB).

Vibration refers to the regular rhythm of movement of any object. Vibration can be measured in different ways such as acceleration, velocity, frequency and displacement.



How the assessment has been carried out

A Preliminary Noise Assessment was completed in 2022, with further studies undertaken to assess predicted noise from the proposed terminal station, battery energy storage facility, wind turbines, on-site quarry, concrete batching plant, and other associated electrical equipment across the lifecycle of the Project.

A range of technical investigations and assessment methods are now being finalised to understand the potential for noise and vibration impacts on sensitive receivers, and to ensure appropriate mitigation measures are considered to avoid or minimise potential adverse effects.

The study area extends to five kilometres from the proposed locations of the wind turbines and associated temporary and permanent infrastructure. The assessment methods used to assess potential noise and vibration impacts include:

- gathering data on existing background (environmental) noise within the study area
- using predictive modelling to estimate potential noise and vibration levels during construction and operation
- considering cumulative impacts from Project elements operating at the same time, as well as from nearby existing or approved developments
- undertaking a risk-based assessment of potential impacts during construction and operation.

A draft of the assessment has been provided to the Technical Reference Group (TRG) for the proposed Project. The TRG, comprising technical specialists and government agency representatives, has provided advice to the Department of Transport and Planning (DPT) and Wind Prospect on the final Scoping Requirements and the adequacy of the technical study and assessment.

An independent peer review of the noise assessment will be carried out prior to the finalisation of the assessment. In addition, an EPA-accredited environmental auditor will verify that the pre-construction (predictive) noise assessment has been conducted in accordance with the *New Zealand Standard on Acoustics – Wind Farm Noise* (NZS6808:2010).

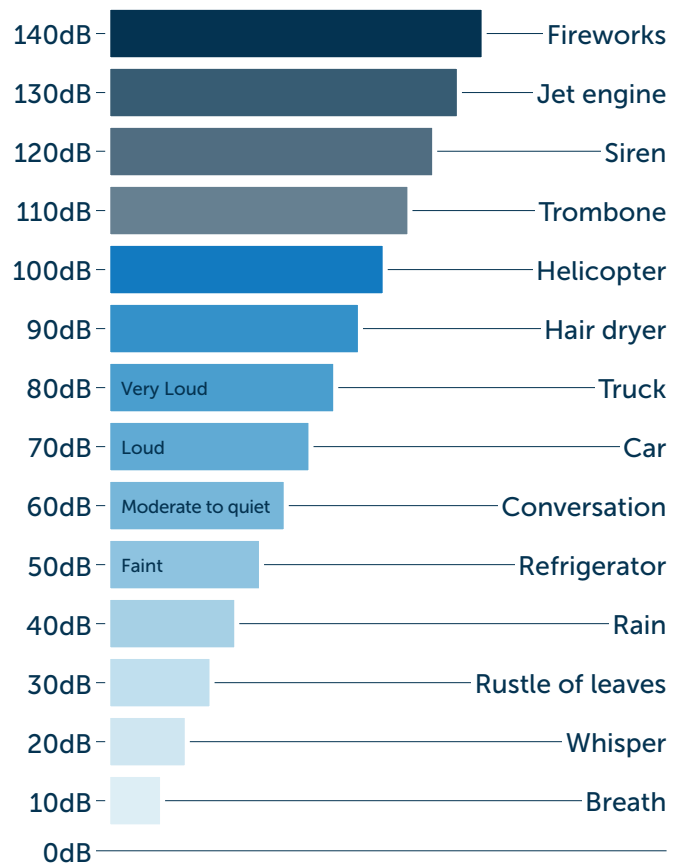


Why is a New Zealand Standard being used?

The noise assessment for the proposed Hexham Wind Farm follows the *New Zealand Standard on Acoustics – Wind Farm Noise* (NZS 6808:2010), as required by the Victorian Government. This internationally recognised standard ensures a consistent and transparent approach to predicting and managing wind farm noise impacts.

Decibel scale

The following decibel (dB) scale provides examples of common sounds to help illustrate typical noise levels.



Source: SafeWork Australia, 2022, Noise hazards and sound levels.

Preliminary Findings

The preliminary findings from the noise assessment show that the Project would comply with Victorian legislation and guidelines through the careful management of potential impacts on noise-sensitive receivers. With management measures in place, the assessment determined:

- Noise generated during construction can be controlled in accordance with relevant Victorian guidelines, including the EPA's *Civil Construction, Building and Demolition Guide*. In construction, noise levels are predicted to be up to 45dB at some times during the day at some neighbouring dwellings.
- Predicted operational wind turbine noise levels are below the noise limits set under the *New Zealand Standard on Acoustics – Wind Farm Noise*. Applicable noise limits are 40dB or background + 5dB, whichever is greater.
- Predicted operational noise levels from the Project's on-site terminal station and BESS are below the noise limits determined in accordance with the *Noise Protocol for the Environment* (EPA Victoria, 2021). Applicable noise limits are 45dB during the day and 34dB at night.
- Noise generated during decommissioning can be controlled using similar measures to those applied during construction.



Working with the Community

Wind Prospect understands that noise and vibration during the construction, operation and decommissioning phases of any project can cause disruption for local communities. As part of the EES preparation, the Project team is consulting with near neighbours – particularly those identified as sensitive receivers – to share the results of the noise and vibration assessment and to discuss potential mitigation measures, if required.

Measures to mitigate potential noise impacts

Based on the assessment findings, a range of mitigation measures will be implemented to manage noise and vibration associated with the construction and operation of the proposed Project. These measures include:



Preparation and adherence to a construction and operational noise and vibration management plan in accordance with Environmental Protection Regulations.



Ensuring the concrete batching plants are designed and located in an area that minimises and avoids potential noise impacts to sensitive receivers.



Selection of equipment and machinery with low sound power levels to reduce noise at the source.



Installation of temporary noise mitigation treatments, such as acoustic barriers or noise walls, to reduce the level of potential noise impacts to near neighbours.



Only carrying out noisy construction activities during standard construction hours.



Early testing of installed turbines to verify that any noise is consistent with the pre-construction noise assessment.



Ongoing consultation with near neighbours and residents, before and during construction activities, and during any noisy work periods.

In line with the *Victorian Government Planning Guidelines for Development of Wind Energy Facilities*, wind turbines are not permitted to be located within one kilometre of an existing dwelling, unless agreed to in writing by the owner of the property.

For the proposed Hexham Wind Farm, all wind turbines are located at least 1.5 kilometres from most neighbouring dwellings. This setback helps to reduce potential noise and vibration impacts for people living near the proposed development during both construction and operation.

What to expect during construction and operation

The noisiest activities associated with the proposed Hexham Wind Farm are expected to be temporary and occur primarily during the construction phase, either on-site or off-site. During operation, the main source of noise is the aerodynamic sound produced as turbine blades pass through the air.

The main sources of noise during construction and operation are outlined below:



Construction (temporary)

Construction of access tracks and infrastructure to connect the wind farm to the electricity network

Construction of turbine foundations and installation of each wind turbine

Heavy vehicle transportation of construction materials and infrastructure to and from the site

Noise associated with the proposed on-site quarry such as excavation and rock crushing

Operation of the proposed on-site concrete batching plants, including mixing and processing activities



Operation

Noise generated from turbine blades turning

On-site terminal and the BESS

Minor noise associated with routine maintenance and inspections of the site

Minor noise associated with overhead power lines

Construction hours

The majority of construction activities for the Project are proposed to occur during standard working hours, in accordance with the Victorian EPA's *Civil Construction, Building and Demolition Guide*:

Monday to Friday: 7am to 6pm

Saturday: 7am to 1pm

In accordance with the EPA guideline, construction activities that are low-noise impact, managed impact or classed as unavoidable works may occur outside normal working hours.

Unavoidable out-of-hours works may include:

- Delivery of oversized turbine components (such as blades), timed to minimise traffic disruption and as part of road access approvals
- Foundation concrete pours during hot weather to enable the concrete to set
- Installation of turbine components, such as rotors, when sensitive to weather conditions and to meet safety requirements.

The community would be notified in advance of any unavoidable works scheduled to occur outside normal construction hours.

Next steps

The final noise and vibration assessment will be submitted as part of the EES documentation for review and assessment by the Planning Minister. The Minister will place the EES, including all technical reports, on public exhibition for a period of 30 days.

Feedback received from the community during the public review period will be summarised in a Submissions Report and considered as part of the Minister's Assessment of the Project.

Have your say

The environmental, social and economic technical studies are being finalised and we welcome you to have your say on the proposed Project. You will be provided with advance notice of the EES exhibition and the formal opportunity to submit a submission, however you can provide feedback at any time by getting in touch with the Project team by email, phone or mail.

We will be out in the community in the lead up to and during the public exhibition period to answer questions about the proposed Project, the EES, technical studies and any other queries you may have.

Visit the Project website for more information on our upcoming in-region engagement activities.

Wind Prospect respectfully acknowledges the Traditional Owners of the land on which our office and each of our projects are located. We also acknowledge and uphold their continuing relationship to the land and pay our respect to their Elders past, present and emerging.

Contact

If you need an interpreter, please call 13 14 50. If you are deaf and/or find hearing or speaking with people on the phone difficult, please contact the National Relay Service on voice relay number 1300 555 727, TTY number 133 677 or SMS relay number 0423 677 767.

 **PO Box 110**
Fitzroy VIC 3065

 **1800 934 322**

 **info@hexhamwindfarm.com.au**

hexhamwindfarm.com.au

