

Noise and vibration

Central-West Orana REZ transmission project

September 2023

EnergyCo is delivering the Central-West Orana Renewable Energy Zone (REZ) to provide a clean, affordable and reliable power supply for energy consumers across NSW. The Central-West Orana REZ transmission project will involve the construction of new transmission lines, energy hubs, switching stations and related infrastructure. The new REZ network infrastructure will enable renewable energy from solar, wind and storage projects to be distributed to energy consumers across the State via the existing NSW transmission network.

Understanding noise and vibration

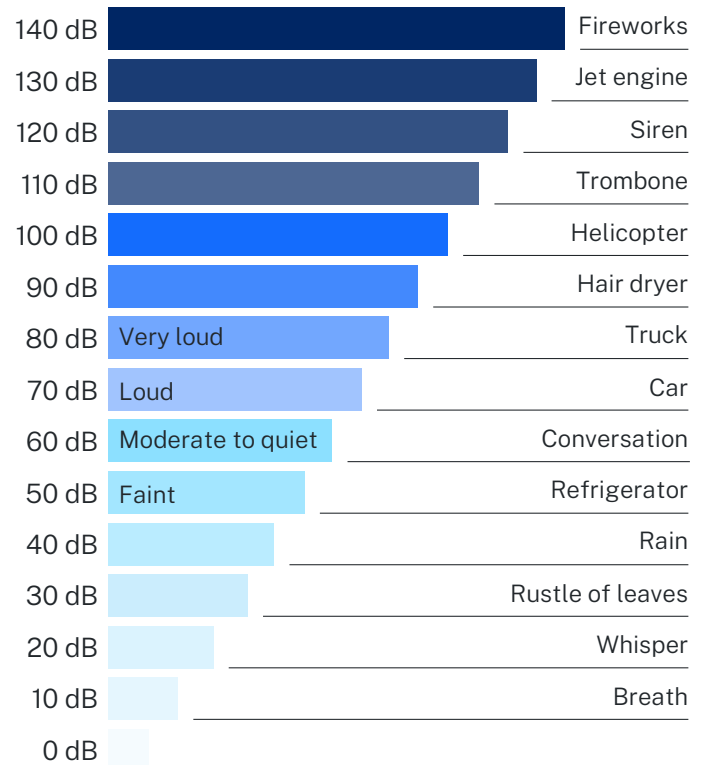
EnergyCo recognises that noise and vibration can be a source of disruption to communities during the construction and operational phases of the project. The Environmental Impact Statement (EIS) provides detailed assessments of noise and vibration and outlines proposed mitigation measures to avoid, minimise and mitigate any potential impacts.

Noise is generally defined as unwanted sound. Sound levels in a given area can vary greatly depending on the number, distance and intensity of noise sources as well as ambient weather and environmental conditions.

Noise is commonly measured in decibels. The scale, to the right, shows the typical noise levels associated with common noise sources.

Vibration can be caused by activities such as excavation, rock and concrete breaking, heavy machinery, piling and soil compaction. The intensity of vibration can vary depending on the ground condition and distance from the activity.

Decibel scale



EnergyCo has prepared an EIS for the Central-West Orana REZ transmission project. You can find information about noise and vibration in **Chapter 15: Noise and vibration**. For information about the EIS exhibition, including details of upcoming information sessions and how to make a submission, visit energyco.nsw.gov.au/cwo.

During construction

Noise and vibration will occur progressively throughout construction and noise levels will change as work progresses and different activities are carried out. Earthwork and helicopter operations are expected to be the noisiest activities, and there may be temporary noise impacts from other sources, such as construction plant and equipment use and construction vehicles travelling to and from work sites. Vibration from construction equipment is expected to be minimal.

Construction noise and vibration will be managed in line with NSW Government guidelines and policy, as well as the following project documents:

- Planning approval conditions
- Construction Noise and Vibration Management Plan (CNVMP), as part of the project's Construction Environmental Management Plan (CEMP).



Construction hours

Standard construction hours for the project are:

- 7am to 6pm, Monday to Friday
- 8am to 1pm on Saturdays
- no work on Sundays or public holidays.

Some activities may be required outside standard hours (known as 'out of hours' work). This may include extended work hours across a seven-day work week to accommodate a rostered fly-in fly-out and drive-in drive-out workforce. Out of hours work would be carried out in line with an out of hours work protocol to manage impacts to local communities and sensitive receivers. To support construction activities during these extended hours, operation of the main construction compounds would also be required.

What activities are likely to generate noise and vibration?



Construction

- Machinery and equipment
- Helicopter and drone activities
- Road traffic
- Blasting



Operation

- Corona noise from transmission lines (crackling sound)
- Energy hub and switching station equipment
- Routine maintenance and inspections

Managing impacts to communities



Monitoring will be carried out during construction activities to ensure noise and vibration levels are within acceptable levels.



The noisiest construction activities will be carried out during standard work hours where possible.



If night work is required (i.e. for traffic or safety reasons), the noisiest activities would be carried out in the earlier part of the evening.



Noise-intensive work would be limited to specific construction hours such as outside of early morning and late afternoon periods.



Respite periods would be provided during activities with high noise and vibration levels.



Temporary noise screens may be used near stationary or long-term static noise sources, or noise generating items.



Machinery would be operated in ways that would reduce noise and vibration levels, such as minimising steel on steel contact or dropping materials into trucks from height.



Traffic movements would be limited to daytime hours where possible.



Simultaneous noise-generating activities would be limited in one area, such as within the energy hub sites.



Consultation would be carried out with nearby landowners and residents prior to work starting, including details of proposed mitigation measures.

Operational noise and vibration

Once the Central-West Orana REZ transmission network is operational, noise and vibration impacts are generally expected to be minimal.

Potential operational noise and vibration impacts may be caused by:

- corona noise from transmission lines (making a crackling type sound)
- noise from energy hubs and switching station equipment such as fan units or circuit breaker switches, which may cause temporary noise
- routine inspection and maintenance activities, however this would generally be a short-term impact on an infrequent basis.

Operational Noise Review

Once the detailed design of the project is finalised, the Network Operator will prepare an Operational Noise Review to confirm the predicted operational noise impacts and any required mitigation measures. The review will include detailed noise modelling to determine the expected operational noise levels at nearby receivers.

Where project-specific noise trigger levels are expected to be exceeded, mitigation measures would be considered. This may include at-source mitigation measures within the energy hub and switching station sites to minimise the amount of noise that is generated from this project infrastructure, and/or at-property treatments to improve the noise insulation of potentially impacted homes.



What is corona noise?

Corona noise is usually described as a crackling or hissing sound and is most noticeable during wet, misty or humid conditions. The sound is created by electricity interacting with the air around the transmission lines. It would typically only be noticeable near the transmission lines.

During dry conditions, transmission line noise is barely able to be heard by most people.



Existing transmission lines near Wellington.

About EnergyCo

The Energy Corporation of NSW (EnergyCo) is a statutory authority responsible for leading the delivery of Renewable Energy Zones (REZs) under the NSW Government's Electricity Infrastructure Roadmap. For more information, visit our website at energyco.nsw.gov.au/about-energyco.

Contact Us

For more information about the Central-West Orana REZ project, you can visit our website or contact the project team:

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🗣️ If you need help understanding this information, please contact the Translating and Interpreting Service on **131 450** and ask them to call us on **1800 061 114**.

EnergyCo wants to hear what you think about our plans. If you have questions or want to give feedback, please get in touch with our team. You can find more information on our website by scanning the QR code or by visiting energyco.nsw.gov.au.

