Electricity & Noise

We actively monitor and manage noise emissions coming from the operation, maintenance, and construction of our electricity assets in line with State Government noise regulations, to minimise community impacts.

Audible noise, often described as humming or buzzing, is a normal by-product of electricity production. You may hear it from:

- power transformers at distribution and transmission substations
- distribution and transmission power lines
- stand-alone power systems
- emergency response generators
- community batteries and battery energy storage systems.

Factors like background noise, weather conditions, and variations in the number, proximity, and intensity of the noise sources can affect how sound is perceived.

Noise regulation

Noise in Western Australia is governed by the Environmental Protection (Noise) Regulations 1997 (Noise Regulations), which sets limits on noise emissions and protects people from unnecessary disturbance.

For more details, visit Department of Water and Environmental Regulation.

How we manage noise

We take steps to mitigate noise impacts when installing new assets or infrastructure. **These include:**

- choosing low-noise equipment - all new transformers and generators meet strict low-noise specifications
- commissioning acoustic specialists to carry out noise studies for proposed sites near sensitive locations to identify management options that reduce noise impact
- considering asset positioning to ensure adequate buffer distances, adjusting layouts, and/or adding physical barriers like solid boundary
  walls or acoustic enclosures
- implementing noise management plans during construction works, avoiding night works where possible.

FAQs

What is noise?

Noise is unwanted sound and can vary in intensity and frequency over time. It is influenced by factors like the number of sources, distance, and environmental conditions and is commonly measured in units of decibels (dB).

For context, here's how common sounds compare:

Typical sound level in dB(A)	Sound Source
140	Jet engine at 30m
130	Rivet hammer (pain can be felt at this threshold)
120	Rock drill
110	Chainsaw
100	Sheet-metal workshop
90	Lawnmower
85	Front-end loader
80	Kerbside: Heavy traffic Lathe
70	Loud conversation
60	Normal conversation
40	Quiet radio music
30	Whispering
0	Hearing threshold

Source: Department of Energy, mines, Industry Regulation and Safety: Managing noise and preventing hearing loss at work.

How are noise emission levels measured?

Measuring noise emissions requires specialised equipment operated by authorised professionals. Instruments like sound level meters ensure results are accurate and consistent, following strict rules for placement, duration, and calibration.

For more information read Department of Water and Environmental Regulation - Noise Measurement

Why do transmission lines produce more noise on some days and not others?

Transmission line noise varies depending on conditions such as:

- weather (e.g., light rain, fog, or humidity)
- physical state of the wires and hardware
- voltage levels.

The noise, often described as faint buzzing or crackling, is typically more noticeable during wet or humid weather and is caused by a phenomenon called corona.

In many cases, background sounds such as wind, rain and nearby traffic are louder than the noise from the transmission line, even in the least favourable weather conditions. On dry days, transmission line noise is typically barely perceptible.

What is corona noise?

Corona noise occurs when electric fields around transmission line conductors become concentrated enough to create small electrical discharges, ionising the surrounding air.

Conductor voltage, shape and diameter as well as scratches, dust, and water on the wire can affect the creation of coronas.

When a corona forms, there can be a crackling or humming sound, often caused by water drops that collect on the conductor when it rains or when there is high humidity.

More information

For more information on Clean Energy Link, visit **westernpower.com.au**

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