WHAT NOISE DO TRANSMISSION LINES MAKE?
Just as with other objects in the landscape such as trees and buildings, elevated wind blowing through a steel tower or wires of an overhead transmission line can produce aeolian noise. Wind speed and direction can be critical to whether aeolian noise is heard or not.

In addition to aeolian noise, in wet conditions all electrical conductors (the wires) can have an associated ‘corona discharge’ which will generate a small amount of sound.

WHAT IS CORONA DISCHARGE?
Corona discharge is essentially the sound of minor electrical leakage from the conductor. Transmission line noise emissions are usually not clearly audible to a person on the ground below an overhead conductor unless conditions are wet, damp or foggy when elevated corona discharge occurs. This is due to water droplets collecting on the surface of the conductor – the higher the rainfall the higher the noise level. In some cases, (as per the image), the insulators on the line may be involved. Insulator noise is similar to corona noise except it does not depend on weather conditions, and may be exacerbated by dirty or broken insulators.

WHAT ARE TRANSPOWER’S RESPONSIBILITIES FOR TRANSMISSION LINE NOISE?
Transpower (like anyone else in New Zealand) has a duty under the Resource Management Act to ensure noise emissions remain reasonable at all times, and that the ‘best practical option’ is being adopted to avoid unreasonable noise. What actually represents an ‘unreasonable’ level of noise is not defined in the Act as it will depend on the characteristics of the local environment and the circumstances of the case.

Even under wet conditions transmission lines emit modest levels of sound that usually register at or below typical ambient night time sound levels found in cities and urban areas.

In general, reasonable night time noise levels in sensitive areas, can be viewed as not exceeding 35-45 dBA Leq (similar noise levels to those found in a typical office environment or residential area with no traffic). This is the range of levels recommended within many council district plans and within the NZ Standard (NZS6802:2008 Acoustics – Environmental Noise).

Our environmental obligations are centred around a commitment to “developing and managing our assets in a way that has regard for the environment and the interests of communities”

To meet this commitment, we take all reasonable and practical steps to:

- comply with applicable laws, legislation, regulations, standards and codes of practice through consenting
- environmental risk assessments.
- minimise any adverse environmental effects resulting from its activities.
- improve environmental performance.
HOW DOES Transpower consider noise when planning new transmission lines or stringing replacement conductors?
For transmission line conductor, we assess potential noise considering the technical specifications of each conductor or insulator. The aim is to always avoid any adverse noise effects by meeting council requirements – the 35-45 dB(A) Leq level in noise sensitive sites (like residential areas).

WHAT ARE SOME OF THE ACTIONS Transpower can consider to mitigate noise from existing transmission lines?
Where there is elevated noise coming from the insulators on a tower, this may be due to dirty or broken insulators, and Transpower will investigate, repair and or wash the insulators. In some cases, new conductor has the potential to be perceptibly noisier initially due to the oil used in manufacture retaining water droplets on the line. Cleaning the conductor during manufacture can reduce such noise.

Is noise from Transpower’s transmission lines bothering you? Do you have any questions around noise from Transpower transmission lines?
Please contact one of the following numbers:
1. In a grid emergency please call our 24-hour hotline 0800 THE GRID
2. Landowners – please call 0508 LANDOWNER
3. General enquiries – 04 590 7000