

MWP

RECEIVED: 19/12/2025

Appendix 11A – Glossary of Terminology

Ballynisky Wind Farm

Ballynisky Green Energy Ltd.

December 2025

RECEIVED: 19/12/2025

Glossary of Terminology

Terminology	Description
Ambient Noise	The existing background sound level in an environment, excluding noise contributions from the wind turbine.
Amplitude Modulation (AM)	A cyclical fluctuation in sound level caused by aerodynamic interactions of wind turbine blades with airflow, often characterized by a “swishing” or “thumping” sound.
A-weighting (dBA)	A frequency weighting applied to sound measurements to approximate human hearing sensitivity, emphasizing mid-range frequencies while attenuating low and high frequencies.
Background Noise	The sound level present in an environment without contributions from the wind turbine or other newly introduced sources.
Decibel (dB)	A logarithmic unit used to quantify sound intensity. Sound levels in decibels follow a logarithmic scale, meaning a small increase represents a significant change in perceived loudness.
Directionality	The characteristic of a noise source that determines how sound propagates in different directions. Wind turbine noise varies spatially due to blade movement, terrain effects, and atmospheric conditions.
Equivalent Continuous Sound Level (LAeq,T)	The time-averaged sound pressure level over a specified measurement duration, representing fluctuating noise levels as a single continuous value.
ETSU-R-97	A widely recognized UK assessment methodology for evaluating wind turbine noise impacts, defining acceptable noise limits relative to background conditions.
Frequency (Hz)	The number of oscillations or cycles per second of a sound wave, determining pitch. Lower frequencies correspond to deep, rumbling sounds, while higher frequencies correspond to sharp or piercing tones.
Infrasound	Low-frequency acoustic waves below 20 Hz, often imperceptible to human hearing but subject to debate regarding their physiological effects.
LA90,T	The statistical sound level exceeded for 90% of a measurement period, often used to characterize steady background noise levels in wind turbine assessments.

Terminology	Description
Noise Propagation	The transmission and attenuation of sound through the environment, influenced by meteorological conditions, terrain, vegetation, and surface reflections.
Octave Band Analysis	A method of segmenting noise into discrete frequency bands, allowing for detailed spectral evaluation of wind turbine emissions.
Sound Power Level (Lw)	A measure of a noise source's total acoustic energy output, independent of distance and atmospheric conditions.
Sound Pressure Level (Lp)	The measured sound level at a given location, expressed in decibels. Influenced by distance from the source and environmental effects.
Tonality	The presence of discrete, dominant frequencies in noise emissions, which can increase annoyance levels if perceptible.
Wind Shear	The variation in wind speed with height, affecting both turbine blade aerodynamics and resultant noise generation.
Wind Speed Bin	A categorization method where wind speeds are grouped into discrete intervals (e.g., 3–5 m/s, 5–7 m/s). Used in noise assessments to analyse variations in turbine emissions and background noise at different wind speeds.