Appendix 10-2

Glossary of Acoustic Terminology

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A variety of acoustic parameters and terminology are used throughout this chapter. Significant definitions are identified at this stage to inform the reader.

A – Weighting	The "A" suffix denotes the fact that the sound levels have been "A-weighted" in order to account for the non-linear nature of human hearing.
Background Noise	The ambient noise level already present within the environment in the absence of the wind farm operation. The $L_{A90,10min}$ is the parameter that is used to define the background noise level in this instance. L_{A90} is the sound level that is exceeded for 90% of the sample period. It is typically used as a descriptor for background noise.
Daytime	Defined as 07:00 to 23:00hrs.
dB (decibel)	The scale in which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micro-pascals (20 μPa).
dB(A)	An 'A-weighted decibel' – a measure of the overall noise level of sound across the audible frequency range (20 Hz – 20 kHz) with A-frequency weighting (i.e. A – Weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Hub Height Wind Speed	The wind speed at the centre of the turbine rotor.
Night time	Defined as 23:00 to 07:00hrs.

Noise	Noise is the term often used to describe unwanted sound (i.e. sound that annoys, interferes with activities or damages hearing). It is also used to describe a combination of sounds which vary randomly with time and which cover a wide frequency range.
Noise Sensitive Location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Pascal (Pa)	Pascal is a unit of pressure and so sound pressures are measured in Pascals.
Sound Power Level (L_W)	The sound power level of an item is defined as: $L_p = 10 \times \log_{10}(W/W_o)$ dB. Where W is the acoustic power of the source in Watts (W) and W_o is a reference sound power chosen in air to be 10^{-12}W.
Sound Pressure Level (L_p)	The sound pressure level at a point is defined: $L_p = 20 \times \log_{10}(P/P_o)$ dB. Where P is the sound pressure and P_o is a reference pressure for propagation of sound in air and has a value of 2×10^{-5}Pa.
10 Minute Average Wind Speed (m/s)	The wind speed measured by a calibrated cup anemometer at a specified height above ground level, averaged over a 10-minute period.