Sure Partners Limited

ARKLOW BANK WIND PARK PHASE 2
ONSHORE GRID INFRASTRUCTURE

VOLUME III
Chapter 11 APPENDICES

Appendix 11.1 Acoustic Terminology

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Appendix 11.1

Acoustic Terminology

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Term	Definition
Noise	Unwanted sound.
Decibel (dB)	The range of audible sound pressures is approximately 2 x 10^{-5} Pa to 200 Pa. Using decibel notation presents this range in a more manageable form, 0dB to 140dB. Mathematically Sound Pressure level = 20 log {p(t)/p0} where p0 = 2 x 10-5 Pa.
"A" Weighting (dB(A))	The human ear does not respond uniformly to different frequencies. "A" weighting is commonly used to simulate the frequency response of the ear. It is used in the assessment of risk of damage of hearing due to noise.
Ambient Sound	Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far (The ambient sound comprises the residual sound and the specific sound when present).
Ambient Sound Level La = $L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T.
Background Sound Level $L_{A90,T}$	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.
Equivalent Continuous A-weighted Sound Pressure Level $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, T = t2 – t1, has the same mean-squared sound pressure as a sound that varies with time, and is given by the following equation: $$LAeq,T = 10 \times log\left\{\left(\frac{1}{T}\right)\left(\frac{P_A^2}{P_o^2}\right)dt\right\}$$ Where p0 is the reference sound pressure (20μPA); and PA(t) is the instantaneous A-weighted sound pressure level at time t
Peak Particle Velocity	Is the greatest instantaneous particle velocity during a given time interval. If measurements are made in 3-axis then the resultant PPV is the vector sum i.e. the square root of the summed squares of the maximum velocities, regardless of when in the time history those occur.