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# FENWICK SOLAR FARM

Preliminary Environmental Information Report

Volume III Appendix 11-2: Acoustic Terminology

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# 1. Acoustic Terminology

1.1.1 Acoustic terminology used in the noise and vibration assessment are summarised in Table 1-1.

**Table 1-1: Acoustic Terminology**

<b>Term</b>	<b>Description</b>
Noise	Unwanted or unexpected sound.
Frequency (Hz)	The number of cycles per second (i.e., the number of vibrations that occur in one second); subjectively this is perceived as pitch.
Frequency Spectrum	The relative frequency contributions that make up a noise.
"A" Weighting (dB(A))	The human ear does not respond uniformly across the audible frequency range. The "A" weighting is commonly used to simulate the frequency response of the ear.
Decibel (dB)	The decibel is a logarithmic ratio of two values of a variable. The range of audible sound pressures is approximately $2 \times 10^{-5}$ Pa to 200 Pa. Using decibel notation presents this range in a more manageable form, 0 dB to 140 dB.
Sound Pressure Level (Lp)	Equal to 20 times the logarithm to the base 10 of the ratio of the root mean squared (RMS) sound pressure to the reference sound pressure. In air the reference sound pressure is $2 \times 10^{-5}$ Pa. Mathematically: $\text{Sound Pressure Level (dB)} = 20 \log_{10} \{p(t) / P_0\}$ Where $P_0 = 2 \times 10^{-5}$ Pa
Ambient Noise Level, $L_{Aeq,T}$	The equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time that is usually composed of sound from many sources near and far.
Background Noise Level $L_{A90,T}$	The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T, measured using the fast time weighting, F, and quoted to the nearest whole number.
Reference Time Interval, $T_r$	The specified interval over which an equivalent continuous A-weighted sound pressure level is determined.
Specific Noise Level, $L_{Aeq,Tr}$	The equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval.

<b>Term</b>	<b>Description</b>
Rating Level, $L_{Ar,Tr}$	The specific noise level plus any adjustment for any characteristic features of the noise.
Level $L_{A10,T}$	The A-weighted sound pressure level exceeded for 10% of a given time interval, T, measured using the fast time weighting, F.
Peak Particle Velocity	The peak speed of particle movement in the ground due to vibration and used to assess impacts from construction activity induced vibration. The Peak Particle Velocity is defined as millimetres per second (mm/s).
LOAEL	Lowest Observed Adverse Effect Level
SOAEL	Significant Observed Adverse Effect Level



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