



Cush Wind Farm
Phase II

Environmental Impact Assessment Report

Annex 12.3: Operational Noise Study Area

Cush Wind Limited

ANNEX 12-3. NOISE STUDY AREA

The Institute of Acoustics document Good Practice Guide To The Application Of ETSU-R-97 For The Assessment And Rating Of Wind Turbine Noise states, in section 2.2 in relation to the extent of the study area:

The 'study area' for background noise surveys (and noise assessment) should, as a minimum, be the area within which noise levels from the proposed, consented and existing wind turbine(s) may exceed 35 dB L_{A90} at up to 10 m/s wind speed. (Note: unless stated, in this document the wind speed reference for noise data is the 10 metre standardised wind speed, derived from the wind speed at turbine hub height as explained in Section 2.6).

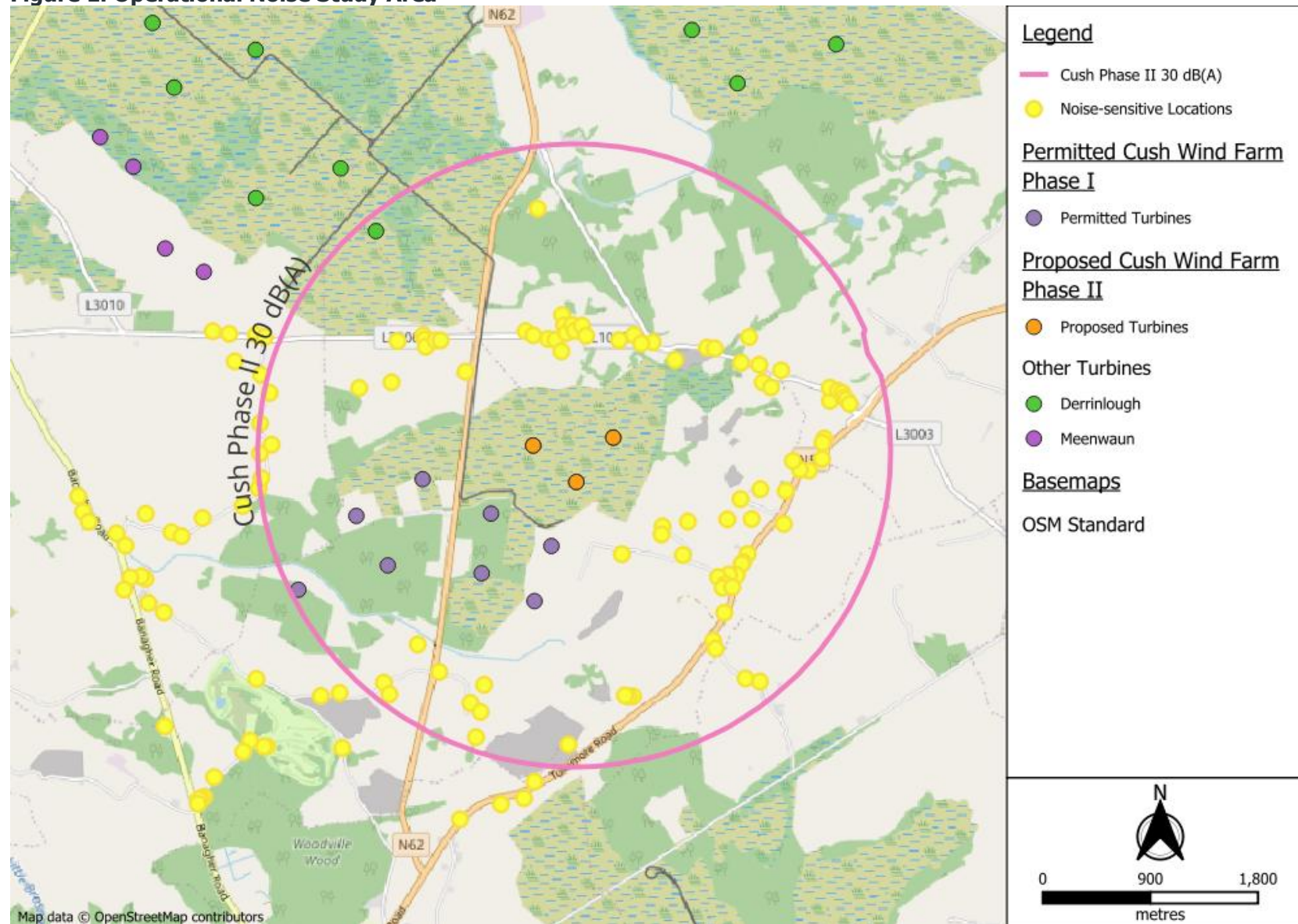
In some circumstances the cumulative 35 dB L_{A90} area may extend beyond the area where the proposed turbines will have any significant effect. This initial study area can be refined by applying the '10 dB rule' such that the following statement is true:

The study area for operational turbine noise can be defined as the area within which the predicted turbine noise levels from the proposed, consented, and existing wind turbines is greater than 35 dB L_{A90} , and the predicted noise from the proposed turbines in isolation is within 10 dB of the proposed fixed lower threshold for turbine noise.

As discussed in Chapter 12 it is considered that a lower daytime threshold of 40 dB L_{A90} is appropriate for low noise environments where the background noise is less than 30 dB L_{A90} . Therefore, the study area for the operational phase was determined as the area predicted to exceed 30 dB L_{A90} at the maximum predicted turbine noise emission level from the proposed project in isolation as presented in Figure 1.

The set of 131 noise-sensitive locations (NSLs) used in the noise assessment is based on a 2km distance from any of the Cush Phase I or Cush Phase II turbines. This set of NSL cover the vast majority of the 30 dB(A) noise contour due to the proposed wind turbines. It is acknowledged that there are a small number of NSLs in at Fivealley which are beyond 2km from a turbine but within the 30 dB L_{A90} contour. Cumulative noise levels predicted noise levels at nearby NSL H119 to H122 are in the range 34.6 to 35.5 dB L_{A90} . Based on this, the predicted noise levels at NSLs at Fivealley are of the order of 35 dB(A) and therefore well below the adopted criteria in the assessment and therefore no mitigation measures are required for noise at these locations.

Figure 1. Operational Noise Study Area



a. [Background: Open Street Map](#)