Appendix 10-2

CUMULATIVE SCREENING FOR NOISE ASSESSMENT

APPENDIX 10-2 CUMULATIVE SCREENING FOR NOISE ASSESSMENT

The list of cumulative wind farms which were considered in the selection of the study area selection extends to an approximate distance of 25 km, based on the set of wind farm developments identified in Chapter 2 of the EIAR. In terms of environmental noise, this list extends well beyond the distance range of potential cumulative impacts for noise. The full list of wind farms considered is presented in Table 2-5 of Chapter 2. The wind farms developments within 10 km are:

- Cloncreen Wind Farm (21- turbine) (existing);
- Mountlucas Wind Farm (28- turbine) (existing);
- Yellow River Wind Farm (29 – turbine) (Permitted and under construction).

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).

If there were no other wind farms to be considered, the study area could be defined to be simply the 35 dB L_{A90} noise contour at maximum sound power level for the turbine, due to the proposed development only. The inclusion of other wind farms in the noise model has the potential to increase predicted noise levels to above 35 dB L_{A90} at a wider set of noise-sensitive locations (NSLs). Theoretically, any predicted noise level above 25 dB L_{A90}, due to another wind farm in its own right, could cumulatively result in a noise level above 35 dB L_{A90} when considered in conjunction with the proposed development. This methodology is considered a robust means of selecting the zone of potential cumulative noise impact.

The approach here is to model the full set of potentially cumulative wind farms and predict 25 dB L_{A90} contours for each one. Where any 25 dB L_{A90} contour touches or overlaps the 35 dB L_{A90} contour from the proposed development, then that wind farm should be included in the cumulative assessment.

Figure 1 presents the 25 dB L_{A90} contours for each of the wind farms listed above, along with the 35 dB contour for the Proposed Development. It can be seen that the contours for Yellow River are separated from the 35 dB contour for the Proposed Development, therefore it is not necessary to include these wind farms in the cumulative noise modelling. The contour for Mount Lucas and Cloncreen wind farms clearly intersects the 35 dB for the Proposed Development, therefore there is a potential for cumulative turbine noise impacts with these wind farms and they have been included in the cumulative noise modelling calculations for the Proposed Development.

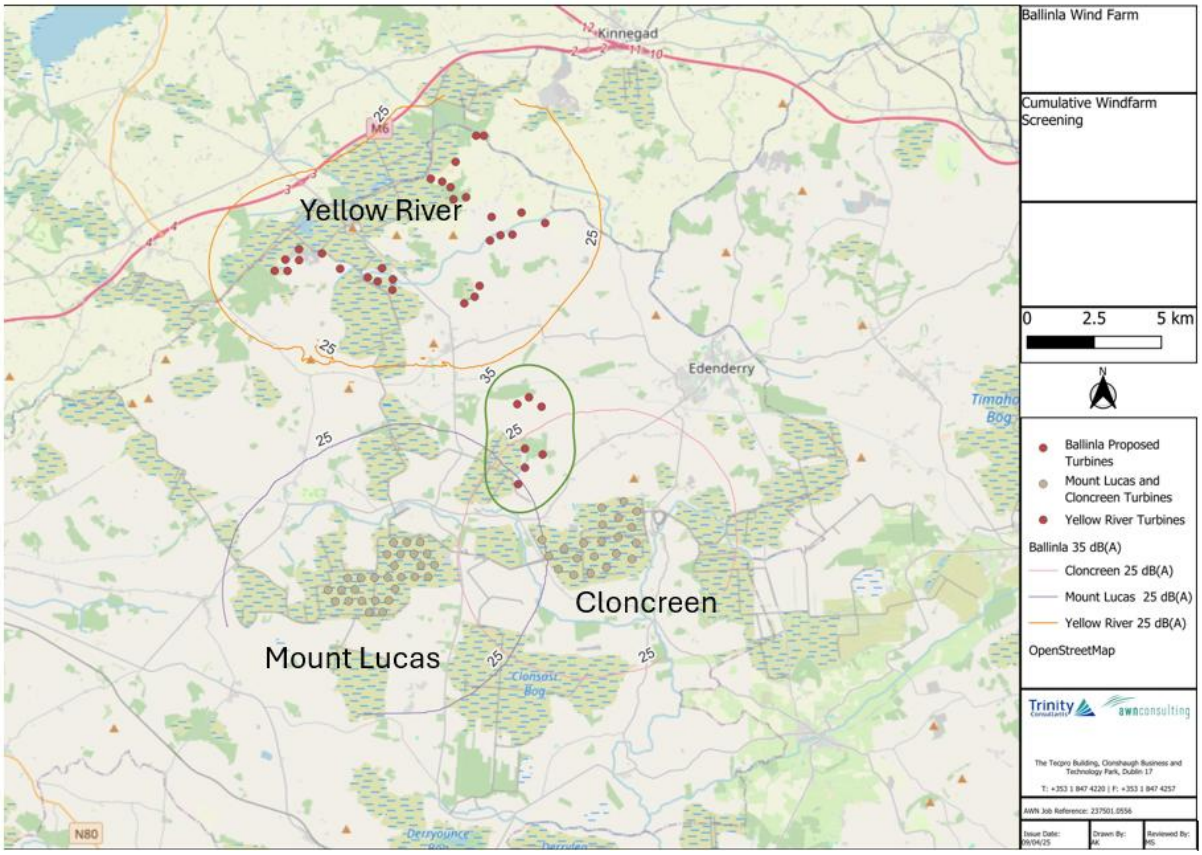

Figure 1: 35 dB L_{A90} contour for the Proposed Development (in green) and 25 dB L_{A90} contours from surrounding wind farms.