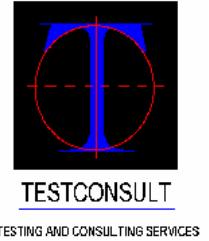


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Rural Wind Farm – near Aberystwyth, Ceredigion

Assessment of the possible noise impact of proposed Wind Farm sites is an important factor when considering environmental pollution, public health and amenity value of dwellings close to the site.

During the planning stage of a wind farm, discussions are likely to be held with the local Environmental Health Officer with respect to agreeing acceptable levels of noise from the proposed site. The performance of a background noise survey around the site will help identify the dwellings that are most sensitive with respect to noise and the wind speed at which the greatest noise impact from the development will occur.

The prevailing background noise level at sensitive dwellings will need to be agreed with the local EHO so that noise limits at different turbine operating wind speeds can be set. Predictions are then undertaken and changes made to the proposed wind turbine layout, where necessary, to ensure that the noise limits that have been set can be achieved.

Noise assessment will be in accordance with the recommendations set out in Section 7 of DTI Report ETSU-R-97 – The Assessment & Rating of Noise from Wind Farms.

Monitoring Locations

Monitoring will be undertaken at the location to which the noise limits apply; this will generally be the properties in the vicinity of the proposed wind farm.

The measuring equipment used for the survey will consist of an integrating-averaging sound level meter conforming to type 2 or better of BS EN 60804 and BS EN 60651. The sound level meter will be tripod mounted at a height of 1.2 – 1.5m above ground (in accordance with BS 4142: 1997) and at least 10m from a building façade. Wind shields should be fitted to avoid contamination by the effect of wind.

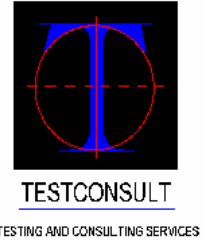


Background Noise Survey

Proposed limits of environmental noise are set in relation to the existing background noise levels at wind speeds up to 12 m/sec. It is therefore necessary to correlate background noise measurements with wind speed measurements performed at the proposed site, such that the actual operating noise levels from the turbines may be compared with the noise levels that would otherwise be experienced at the dwelling.

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Survey Period

The background noise measurement will be undertaken over a sufficient period of time to allow a reliable assessment of the prevailing background noise levels. Monitoring will be undertaken over a period of not less than 1 week and seasonal conditions such as rainfall and foliage cover considered.

Background noise curves will be produced for both day-time quiet periods and for the night-time period.

Acoustic Measurements

Background noise measurements will be measured using the A-weighted L_{90} statistic function on the Sound Level Meter. These readings will be taken over consecutive 10-minute intervals. The Sound Level Meter will be calibrated in accordance with the procedure specified in BS 4142: 1997.

Acceptance Criteria

For day-time acceptance levels, wind farm noise should generally be equal to the equivalent background level plus 5dB (A) at every wind speed. If background noise levels are particularly low then the acceptance level may be amended.

For night-time acceptance levels, wind farm noise should be equal to the equivalent background level plus 5 dB(A) but subject to a lower limit of 43 dB(A).

Reporting

Reporting will take the form of an initial survey of background noise showing $L(A)_{90}$ values plotted against wind speed. This graph will be supplemented with additional data from the wind turbine once operational such that the gap between background and Wind Farm noise can be assessed against the 5 dB(A) criteria.