

7. Operational Noise Conditions:

- a. The rating level of noise immissions from the combined effects of the wind turbines (including the application of any penalties for tonal and/or amplitude modulation components) when determined in accordance with the *'IOA good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise'* and the attached tonal and EAM guidance notes (to this condition), shall not exceed the values for the relevant integer wind speed set out in, or derived from, table 1 below at any dwelling which is lawfully existing or has planning permission at the date of this permission.

Table 1:

Noise limits expressed in dB $L_{A90,10 \text{ minute}}$ as a function of the standardised wind speed (m/s) at 10 metre height as determined within the site averaged over 10 minute periods. Note - Noise limits referenced to standardised 10 metres height wind speed (derived from hub height).

Standardised wind speed at 10 meter height (m/s) within the site averaged over 10-minute periods	dB LA90, 10minute at any residential property. Figure rounded to the nearest whole number
1	35
2	35
3	35
4	35
5	35
6	35
7	35
8	35
9	35
10	35

- b. The wind farm operator shall continuously log power production, wind speed and wind direction, all in accordance with the *'IOA good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise'* guidance notes. These data shall be retained for a period of not less than 24 months. The wind farm operator shall provide this information in the format set out in the IOA guidance notes mentioned above to the Local Planning Authority (LPA) on its request, within 14 days of receipt in writing of such a request.
- c. At the request of the LPA, the wind turbine operator shall, at their own expense, employ a suitably competent and qualified person, approved in writing by the LPA, to measure and assess the noise level from the turbines. All methodology shall be submitted to, and approved in writing by the LPA, prior to the noise measurements being undertaken in accordance with that agreed. The assessment shall report on noise immissions from the turbines at locations identified within the agreed methodology. The assessment shall be commenced within 21 days of the notification, or such longer time as approved by the LPA.
- d. The approved noise monitoring method shall include an assessment of tonality $\Delta L_{a,k}$ as described in IEC 61400 (small/large turbines) and ISO 1996-2:2007 (small turbines). Where a tone is identified a penalty shall be added to the measured sound levels in accordance with ETSU-R-97 and the guidance note entitled 'Tonality', attached to this condition.
- e. A copy of the assessment, together with all recorded data and audio files obtained as part of the assessment, shall be provided to the LPA (in electronic form) within 60 days of the notification.

- f. The instrumentation used to undertake the measurements shall be calibrated in accordance with the '*IOA good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise*' and certificates of calibration shall be submitted to and approved by the LPA.
- g. If the assessment requested by the LPA demonstrates that the specified noise limit is being exceeded, the operator of the turbines shall take immediate steps to ensure that the noise emissions from the turbines are reduced to, or below, the specified noise limit. The operator shall provide written confirmation of that reduction to the LPA within a time period to be agreed with the LPA. In the event that it is not possible to achieve the specified noise limit with mitigation within a 3 month period, then the operation of the turbines shall cease, unless an extension of time is required and approved in writing by the LPA.
- h. In the event that alternative turbines and/or locations (i.e micro-siting) to those contained in the submitted noise assessments (Acoustic report by Huntingdonshire District Council entitled '*Simplified ETSU-R-97 Noise Assessment, Two proposed EWT 75/54 wind turbines Redhill Farm, Stretham, Cambs*', dated 6th January 2014 and Acoustic report by WSP Parsons Brinckerhoff entitled '*Redhill Farm Wind Turbine Noise Assessment*', dated June 2015) are chosen for installation, then development shall not take place until a new desktop site specific noise assessment of the proposed turbines has been submitted to and approved in writing by the Local Planning Authority. Alternative turbines shall meet the noise limits in Operational Noise Condition a and Table 1.
- i. Where micro-siting of the turbines has been approved, the applicant shall provide the 12-figure national grid reference of the installed turbines to the Local Planning Authority within 4 weeks of commissioning of the turbine.
- j. Within 28 days from receipt of a written request from the Local Planning Authority, the wind turbine operator shall submit a scheme for the assessment and control of Excessive Amplitude Modulation (EAM) to the Local Planning Authority for its written approval. The scheme shall be in general accordance with:
- Any guidance endorsed in National or English Planning Policy or Guidance at that time, or in the absence of endorsed guidance,
 - Suitable published methodology endorsed as good practice by the Institute of Acoustics; or in the absence of such published methodology,
 - The methodology published by Renewable UK on the 16th December 2013, or any other methodology agreed in writing by the Local Planning Authority;

The approved scheme for assessment and mitigation shall be implemented within 3 months of the written approval by the Planning Authority. Measures to control EAM shall thereafter be retained.

In the event that the EAM cannot be eliminated or reduced below the level specified in the agreed methodology, then the operation of the turbines shall permanently cease.

Note: Excess Amplitude Modulation (“Excess AM”) is the modulation of aerodynamic noise produced at the frequency at which a blade passes a fixed point and occurring in excess to Amplitude Modulation already taken into account in ETSU-R-97, The Assessment and Rating of Noise from Wind Farms, on page 68.

Tonality Guidance Note:

(a) If a tonal penalty is required in accordance with section d of the condition the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in (b) below and the penalties for tonal noise as derived in accordance with section d of the condition at each integer wind speed.

(b) For those data points considered valid, values of the LA90, 10 minute noise measurements and corresponding values of the 10- minute wind speed, as derived from the standardised ten metre height wind speed averaged across all operating wind turbines using the approved methodology from part (c) of the condition, shall be plotted on an XY chart with noise level on the Y-axis and the standardised mean wind speed on the X-axis. A least squares, “best fit” curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind turbine/s noise level at each integer speed.