Institute of Acoustics Statement in Respect of Wind Farm Noise Assessment

December 2024

The Institute of Acoustics (IOA) is the UK's professional body for those working in acoustics, noise and vibration. It engages widely with other professional bodies in related fields, and members are active in UK, European and International Standards development. Members also work in many sectors including consultancy, research and development, local and central UK Government, as well as for developers of, and objectors to, wind turbines, where they get involved with wind farm noise assessments.

ETSU-R-97

Published in 1996, ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms' contains a methodology for generating noise limits for a wind turbine, and wind farms, and is currently referenced by the UK Government as a guidance document. The UK Government has endorsed ETSU-R-97 in various policy documents / statements since its publication, and it is the UK Government (that is responsible for planning policy) who decide the noise limits in ETSU-R-97.

IOA Good Practice Guide

At the invitation of the Department for Energy and Climate Change (DECC), the IOA agreed to produce a Good Practice Guide (GPG) to the application of ETSU-R-97, considering the technical elements only. The GPG was published in 2013, with additional supplementary guidance notes published in 2014. This remains current guidance endorsed for use until such time as an updated version is published.

Amplitude Modulation

'Amplitude Modulation' (AM) is a feature of the character of wind farm noise caused by the cyclical nature of the blades. An understanding of the causal mechanisms has been gained in recent years, along with control methods to help assist with sites where AM can lead to complaints. An IOA endorsed metric was published in 2016 and can be found at: [http://ioa.org.uk/publications/wind-turbine-noise]. A sample planning condition was proposed by IOA members which was published in the IOA bulletin (November-December 2017 issue).

Infrasound

The IOA is aware that there is some information presented at planning inquiries suggesting the potential for physiological health effects from infrasound from wind turbines. It is current advice to members that there is no need to assess infrasound as part of the noise impact assessment process, as the absolute levels are well below those reported to trigger physiological health effects based on peer reviewed research to date.

Low Frequency Noise

The IOA is aware that there is some information presented at planning inquiries suggesting the potential for physiological health effects from low frequency noise from wind turbines. It is current advice to members that there is no need to assess low frequency noise as part of the noise impact assessment process, as the absolute levels, whilst potentially audible at typical receptor distances, are

well below those reported to trigger physiological health effects based on peer reviewed research to date.

Vibration

Vibration from operational wind turbines has been measured by extremely sensitive measurement equipment such as seismic arrays. but in terms of human perception, measured vibration levels are well below perception thresholds even on the actual wind turbine sites. There is, therefore, no need to assess vibration affecting people for operational wind turbine developments.

Summary

The IOA has a responsibility to provide guidance on technical matters within its sphere of activity. The GPG and the IOA metric are endorsed by IOA Council to give advice to members on how to apply ETSU-R-97. It will continue to advance the understanding of AM through its renewable energy advisory group and update its advice when new evidence emerges.