

**Mid Wales (Powys) Conjoined Wind Farms Public Inquiry
SESSION 4: Matters in Common/Cumulative Effects**

**PROPOSED REPOWERING AND EXTENSION TO LLANDINAM WIND
FARM, POWYS, WALES
BY CELTPower LIMITED**

**STATEMENT BY
DR MATTHEW CAND
ON
NOISE**

ON BEHALF OF CELTPower LIMITED

REFERENCE: BERR/2008/0003

- 1.1 I am Matthew Cand. My qualifications are set out in my proof for session 1 of the Inquiry. The abbreviations I use in my proof are also used here.
- 1.2 The evidence which I have prepared and provide in this statement is true and has been prepared and is given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.
- 1.3 My previous supplementary proof of evidence prepared for session 4 of this inquiry proposed a suitable form of wording (paragraph 1.7) for a planning condition on Amplitude Modulation (AM), should the Inspector consider that one is appropriate. This was based on agreeing a scheme for the control of AM on the basis of the methodology published by RenewableUK last December, or any revisions to it endorsed by the Institute of Acoustics.
- 1.4 During a hearing session on the subject, the Inspector proposed an alternative form of wording which was broadly similar but proposed a form of hierarchy for the scheme. I propose (overleaf) an updated form of this wording which makes explicit reference to the methodology published by RenewableUK.
- 1.5 As noted in the joint expert statement on the subject appended to the proof of evidence of Dr Bullmore to the inquiry, this methodology is based on the techniques and results of the RenewableUK research project. It uses the AM rating methodology which was developed and validated therein, which recognise the feature of AM noise from wind turbines, i.e. periodicity at a rate directly related to the rotational speed of the source wind turbine. It relates this metric to the subjective response established in the study.
- 1.6 The Institute of Acoustics has welcomed the publication of this research but noted that the proposed ReUK planning conditions needs a period of testing and validation over the coming year before it can be considered to be good practice. In the event that, as a result, updated guidance is issued by the IOA or the Government, this would be captured in the condition wording proposed overleaf. This wording is therefore

considered more precise as it provides a starting point which is justified by the weight attributed by the Inspector to the publication of this research.

1.7 A definition of amplitude modulation of wind turbine noise has also been added to distinguish from general changes in noise levels which occur naturally in the absence of wind turbines.

1.8 I consider that the wording proposed below is preferable, should it be considered appropriate to impose such a condition.

Matthew Cand PhD MIOA

06 May 2014

A handwritten signature in blue ink, appearing to be 'M Cand', with a large, sweeping flourish extending to the right.

Proposed revised condition wording

No turbine hereby approved shall be brought into operation prior to the submission to and approval in writing by the local planning authority of a scheme for the assessment and regulation of Amplitude Modulation (AM).

That scheme shall be in general accordance with:

- a) Any guidance endorsed in National Planning Policy or Guidance at that time; or in the absence of endorsed guidance*
- b) suitable published methodology endorsed as good practice by the Institute of Acoustics; or in the absence of such published methodology*
- c) the methodology published by RenewableUK on 16th December 2013.*

The approved scheme shall be implemented for the life of the development hereby approved.

Note: Amplitude modulation is the variation of aerodynamic noise from the turbines at the rate at which the blades pass a given fixed point of their rotation.