Noise Working Group (NWG)

DTI, 1 Victoria Street
2 August 2006

Present:

Alan Smith (DTI)
Jonathan Perks (FES)
Mark Dorrington (FES)
Helen Matthews (DEFRA)
Richard Perkins (DEFRA)
Andy McKenzie (Hayes McKenzie Partnership Ltd)
Bob Davies (RD Associates)
Dick Bowdler (New Acoustics)
Geoff Leventhall (Consultant)
Marcus Trinick (Bond Pearce)
Mark Jiggins (Hoare Lea Acoustics)
Andrew Bullmore (Hoare Lea Acoustics)
Mike Anderson (RES)

Apologies: Alan Purdue (Castle Morpeth LA)
Bernard Berry (Consultant)
David Spode (Shrewsbury LA)
Huw Thomas (Anglesey LA)
Jemery Bass (RES)
John Warren (nPower)
Malcolm Hayes (Hayes McKenzie Partnership Ltd)
Mark Legerton (nPower)
Mike Raw (Scottish Borders LA)
Philip King (RES)

Notes of the Meeting

Introduction by Chair
Alan Smith welcomed those present. He introduced the background to the meeting and highlighted DTI's objectives for the Group which is to provide clear expert advice and guidance on the Aerodynamic Modulation (AM) issue raised in the Hayes McKenzie report on Low Frequency Noise (The Measurement of Low Frequency Noise at Three UK Wind Farms, W/45/00656/00/00, URN No. 06/1412)

Terms of Reference
The NWG will address issues specifically relating to the Hayes McKenzie report:

- Consider and agree, if thought appropriate, the main conclusions of the report
- Consider the report's findings relating to aerodynamic modulation
- If appropriate, provide a means to assess and apply a correction where aerodynamic modulation is a clearly audible feature
- Make clear recommendations, which will assist planning authorities. These recommendations will provide clarity and minimise any confusion when assessing applications

- Recommend actions (if any) to be taken in relation to updating ETSU-R-97

It is intended to complete this review and publish its recommendations in Autumn 2006.

Review of the Hayes McKenzie Report

The main conclusions of the report were agreed. It was noted that Amplitude Modulation is sometimes referred to as Blade Swish. These and future notes will refer to this as 'AM'. There are theories that have been developed by Van de Berg and Oerlemans as to the mechanism of AM but these are conflicting. It is possible that the effect is caused by a combination of these causes.

There was a discussion concerning whether the levels of AM measured by Hayes McKenzie were higher than the levels specified in ETSU–R-97 (p68) as stated in the Hayes McKenzie report (page 65). It was agreed that we needed clarification from the author on this point.

Action on FES to seek clarification from Malcolm McKenzie on this issue.

Identify and Agree Solutions

It was agreed that an understanding of the causes of AM should be developed. A pragmatic and staged approach would be appropriate, the first stage being to gather empirical data from existing developments. It was agreed that the NWG should commission a study to gather empirical data from existing sites to better understand the extent of the AM issues. This should be undertaken as soon as possible, but the group were of the view that due to the nature of the noise and the weather, some of this would have to be carried out in the summer months and it may be too late to mobilise this year. The study will include:

1a	Literature study to review the current knowledge of AM
1b	Identify potential sites which could be used to carry out objective noise measurements Maximum of 10 sites (including 5 where there had been complaints). This would include: • Asking LPAs for information on which sites they had received complaints concerning noise • Identifying control sites (where there had been no complaints) • Developing a methodology for carrying out noise measurements
1c	Contact • turbine manufacturers to find out what their understanding of AM is and what work they are doing to address this issue • windfarm developers to see whether they have any historical data which would help determine the circumstance when AM occurs Report findings back to DTI / DEFRA / NWG
2	Carry out objective noise tests as defined in 1b It was agreed that it would be sufficient to perform these measurements outside of buildings; this would considerably reduce the difficulties of obtaining permissions and access

3	Analyse results This will include the quantification of AM as well as the frequency and length of time AM is found to occur at each site
4	Make recommendations if required Report findings back to DTI / DEFRA / NWG

A very rough estimation was that this would take 12 months to complete and the cost would be of the order of £100k.

DTI and DEFRA agreed to consider how this could be supported taking into consideration their funding situations and other commitments.

Recommendations / Review of Actions
It was agreed that that there is currently insufficient evidence available on AM to recommend any change to ETSU-R-97. However the work recommended above would provide a foundation for clearly identifying and understanding the extent of the AM noise issue and therefore whether any amendment to ETSU-R-97 would be appropriate at some future date.

In the meantime it was agreed that the advice should be given to all stakeholders involved in windfarm development including LPAs regarding future developments:

- Aerodynamic Modulation is a real effect in a few cases, but the cause is currently not understood and therefore when and where it occurs cannot be predicted.
- For future windfarm developments, developers may wish to allow some margin to allow for the noise created by this effect.
- Research will be commissioned to understand the issues surrounding Amplitude Modulation
- Existing developments (which have or are seeking consent) must be unaffected by this advice.

These recommendations and actions were agreed by those present; following agreement by the members of the working group who were unable to attend, DTI (with the help of FES) will prepare a statement, based on the recommendations described above, to send to appropriate organisations and individuals.

Any Other Business
There was no other business.

Date of Next Meeting
To be agreed.

Future Energy Solutions
3 August 2006