EMAIL CORRESPONDENCE CONCERNING MINUTES OF 2 AUGUST NWG MEETING

----Original Message----

From: Jonathan Perks [mailto:Jonathan_M_Perks@uk.aeat.com]

Sent: 09 August 2006 10:33

Subject: Minutes of our meeting last week

Dear all,

Please find attached the minutes of last week's meeting. If any of you has any comments, please can you copy them to Mark Dorrington.

DTI has been receiving all sorts of requests for information etc and so it is the intention to post these minutes on the DTI website.

Could I therefore ask you to send any comments by 16 August.

I am working with Alan to draft a clear statement to send to stakeholders based on the advice agreed at the meeting.

Thanks for your help

Jonathan

PS Mark sent Malcolm Mckenzie an e:mail seeking the clarification requested in the minutes last week.

Jonathan Perks
Future Energy Solutions
The Gemini Building
Fermi Avenue
Harwell International Business Centre
Didcot
OX11 OQR
United Kingdom

Tel: +44 (0)870 190 8435 Mob: +44 (0)7866 563819 Fax: +44 (0)870 190 6318

Email: jonathan.m.perks@aeat.co.uk

----Original Message----

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 10 August 2006 08:00

To: Jonathan Perks; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews;

Alan Smith (E-mail); Andy McKenzie;

malcolm@hayesmckenzie.co.uk; John Warren; Mark Legerton;
Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike
Raw; David Spode; Mark Dorrington

Cc: Kydd Sarah (DECC EDU)

Subject: Re: Minutes of our meeting last week

Jonathan,

I'm sorry to be blunt but I am concerned about the minutes for a number of reasons. I think my overall concern is that the "non-attributable" discussion and the agreements have got confused. Just one example - I think that it would be a mistake to minute that blade swish might get worse because of bigger turbines. I can see the newspaper headlines already "Wind Turbine noise to get Worse". If it were a fact, that would be fine, but we were merely speculating at the time.

And I'm sure I would never have agreed that ETSU-R-97 has been a useful document!!

I would prefer the minutes to reflect the procedure and the science but leave out anything that is merely discussion round the subject. I'm just sending this as a "holding" position. Can I try to put something more constructive together in the next day or two?

Kind regards,
Dick Bowdler

----Original Message----

From: Kydd Sarah (DECC EDU) Sent: 10 August 2006 08:33 To: Dick Bowdler; Jonathan Perks; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry;
Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com;
Alan Purdue; Helen Matthews; Smith Alan (Mr A) EDU; Andy
McKenzie; malcolm@hayesmckenzie.co.uk; John Warren; Mark
Legerton; Bob Davies; Jeremy Bass; Mike Anderson; Philip
King; Mike Raw; David Spode; Mark Dorrington
Subject: RE: Minutes of our meeting last week

Dick

I wasn't at the meeting so it's not right for me to comment on the contents of the minutes. However, it is vital that the minutes are agreed by the group as they will go on public record. I'd be happy for you to make some comments over the next day or two and send to Jonathan - nothing will be issued until everyone has agreed that the minutes are a true and accurate record.

Thanks Sarah

Sarah Kydd Deputy Director Renewable Energy 2010 Target Team DTI Atholl House 86-88 Guild Street Aberdeen AB11 6AR

Tel: 01224 254001 0207 215 0306 Fax: 01224 212521

email internet sarah.kydd@dti.gov.uk GSI sarah.kydd@dti.gsi.gov.uk

This email and any files transmitted with it are intended solely for the use of the individual or entity to whom they are addressed.

----Original Message----

From: Geoff Leventhall [mailto:geoff@activenoise.co.uk]

Sent: 10 August 2006 11:27

To: Dick Bowdler; Jonathan Perks; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews;

Alan Smith (E-mail); Andy McKenzie;

malcolm@hayesmckenzie.co.uk; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike Raw; David Spode; Mark Dorrington

Cc: Kydd Sarah (DECC EDU)

Subject: Re: Minutes of our meeting last week

Dick's right. We have to read and interpret the minutes as others will do, remembering that objectors are far more ruthless than developers in their use/misuse of facts!

In addition to the point raised by Dick, another part which might be used by objectors is the second bullet point near the end, which recommends developers allow a margin below 43dB for the amplitude modulation effect and to reduce number of turbines. ("Expert panel says noise criterion too high - recommend install fewer turbines")

And I suppose that admitting that the cause of the AM is not known, opens us up the industry to some ridicule from objectors. But facts are facts.

With respect to the UK Noise Association WTN Report, perhaps it should be left to the BWEA, with help from some of us, to respond to this.

Regards

Geoff

Dr Geoff Leventhall

Consultant in Noise Vibration and Acoustics 150 Craddocks Avenue

Ashtead Surrey KT21 1NL UK

Tel: (0)1372 272 682 Fax: (0)1372 273 406 geoff@activenoise.co.uk **From:** Legerton, Mark [mailto:Mark.Legerton@npower-renewables.com]

Sent: 15 August 2006 18:18

To: 'Jonathan Perks'; 'Mark Dorrington'

Cc: 'Smith Alan (Mr A) EDU'; 'Jeremy Bass'; 'Geoff Leventhall'; Legerton, Mark; 'Andrew

Bullmore'; 'Dick Bowdler'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; 'Andy McKenzie'; malcolm@hayesmckenzie.co.uk; Warren, John; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'; Jiggins, Mark; Kydd Sarah

(DECC EDU)

Subject: RE: Wind Turbine Noise Working Group - Meeting

Dear all

My comments relate to the version attached to Mark Jiggins' e-mail below. Please excuse the bluntness which often appears in e-mail correspondence, I would have much preferred to attend the meeting.

Personally, I don't think the minutes should be published. As others have identified, this is not a calm, rational debate (outside of this group) but one where any opportunity to take out of context, misinterpret and generally abuse factual information is readily taken, and not always by objectors. Any minutes which were not susceptible to this abuse, and hence counterproductive, would be little more than an attendance list. Unpublished minutes would be a more useful record for the group as it could then contain a summary of discussion, issues to be resolved and alternative viewpoints.

The meeting notes should list "Apologies". I'm sure Malcolm would echo that sentiment along with anyone else who wanted to attend but was unable on the specific date chosen.

From my understanding the fifth term of reference is broader than advertised. It could be misinterpreted as suggesting that the whole document is under review. The third bullet sufficiently describes the action and is specific to AM.

Although it has now been deleted I can confirm that, if anything, larger turbines should reduce the likelihood of AM, see attached spreadsheet. The difference in wind speed across the rotor is less for a large turbine on a taller tower than a smaller turbine on a shorter tower. This is true in open countryside but even more likely when there are local obstructions like trees and buildings in the vicinity of the turbines. The taller turbines will see cleaner air with less turbulence. This assumes of course that wind shear is a root cause, yet to be proven, could equally be yaw misalignment.

Recommendations:

The first bullet point needs more clarity before being released in to public domain. How many sites, for what duration of the time, etc.

Although I've heard the argument for the second bullet point (developers allow a margin) by some whose views I greatly respect, I still have concerns over this recommendation and believe it to be premature and too vague to be useful. For example, a 3dB reduction would probably not have reduced the likelihood of complaint at many of the residences but, everything else being equal, requires a halving of turbine numbers to achieve (I admit that assuming all turbines are equi-

distant from residences is a little unrealistic but I'm sure the point isn't lost). I do not believe this finds the correct balance between the few complaints received and reduction in wind energy potential, sorry. It is not necessarily the case that layouts are dictated by day-time limits now that night-time shear levels are more closely looked at. Suggesting developers leave a margin will be interpreted as a lowering of the night-time limit. This appears to be jumping in at the deep end considering the apparent infrequency of high levels of AM. I am however open-minded and would like to hear the arguments for such an approach in person.

If the recommendation to allow a margin is dropped then the fourth bullet is redundant. Whilst consented sites would be unaffected by any advice now offered, with regard to un-consented sites, it would be difficult to convince the general public that just because an application fell one side of an arbitrary date the noise limits should be different. There are also a great number of sites not yet consented or submitted and regional studies at advanced stages which would be undermined by moving the goalposts.

Less controversially, but I don't think anyone else has said it, DB should be written dB.

I look forward to being able to attend the next meeting (please).

Regards

Mark

Dr Mark Legerton Development Manager - Wales npower renewables

Tel 0118 959 2440

-----Original Message-----

From: Mark Jiggins [mailto:mark.jiggins@btinternet.com]

Sent: 11 August 2006 17:17

To: 'Dick Bowdler'; 'Jonathan Perks'; 'Mark Dorrington'

Cc: 'Smith Alan (Mr A) EDU'; 'Jeremy Bass'; 'Geoff Leventhall'; 'Legerton, Mark'; 'Andrew Bullmore'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; 'Andy McKenzie'; malcolm@hayesmckenzie.co.uk; 'Warren,

John'; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'

Subject: RE: Wind Turbine Noise Working Group - Meeting

Hi All

I think the version that Dick has done is good. I had a couple of minor tweaks and one more major one. I noted that there was a specific paragraph removed which I can see may be controversial but it was discussed but I am not sure if agreed. This is the bit:-

"Existing developments (which have or are seeking consent) must be unaffected by this advice." (I took out the last part of the sentence)

This was a definite proposal from Marcus which I thought some were concerned should be included. I have put it back in so that we can discuss if this should be the case. Perhaps if a site has consent then it is irrelevant as it already has consent and any change will not effect the limits (is this true?). I don't know how many sites there are in

the planning process but there is a possibility that if they all had to revisit the night-time limits some might have to go back to the starting point again (site redesign) and could introduce very large delays, much cost and some unhappy developers. Some of these sites may be preparing for planning appeals.

Modified version attached (I did as Dick did and accepted all the changes then made my own).

Cheers Mark

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 11 August 2006 08:41

To: Jonathan Perks; Mark Dorrington

Cc: Smith Alan (Mr A) EDU; Jeremy Bass; mark.jiggins@btinternet.com; Geoff Leventhall; Legerton, Mark; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; Alan Purdue; Helen Matthews; Andy McKenzie; malcolm@hayesmckenzie.co.uk; Warren, John; Bob Davies; Mike Anderson; Philip King;

Mike Raw; David Spode

Subject: Re: Wind Turbine Noise Working Group - Meeting

Jonathan/Mark,

I attach some suggestions for revisions. To avoid the whole thing being impossible to read I initially accepted all the changes that were in your original. Some notes and explanations:

- Mr Trinick has one "n" I believe.
- We should decide whether it is "Aerodynamic Modulation" or "Amplitude Modulation". Malcom may have confused it by using both in his report. I think "Amplitude Modulation" would be more accurate but any comments?
- In the Introduction by the Chair I think you should put the proper title of the Hayes McKenzie report and the reference/contract number.
- I've left it in but I was not under the impression that the last bullet in terms of reference was part of our remit (updating ETSU). I have no objection personally to the statement as written (ie "recommend actions") but I would want to consider the position further if the NWG were to actually discuss the details of updating. (Most of you will know that I do not think the DTI is the appropriate body to set noise standards).
- I have deleted the whole of the paragraph commencing "It was recognised ..." I think the statements are too sweeping. We may have discussed this but I think it will be the source of problems.

- I've removed "significantly" I don't think Malcolm says this and it will only rack up adverse comments.
- I have deleted the paragraph beginning "There was also a discussion . ." on the grounds that 1) I dont think we agreed that, 2) I don't think it is part of the NWG remit which is concerned with AM.
- I have made some changes to Recommendations. I never agreed that ETSU-R097 was a useful document.
- I've considerably shortened "Advice to Stakeholders" but I think it still makes the point that we agreed.
- Finally I've removed a couple of things at the end that are repetition of previous comments

I hope this helps. I think it leaves the factual stuff we agreed.

Regards,

Dick Bowdler

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 16 August 2006 07:54

To: Legerton, Mark; 'Jonathan Perks'; 'Mark Dorrington'

Cc: 'Smith Alan (Mr A) EDU'; 'Jeremy Bass'; 'Geoff Leventhall'; Legerton, Mark; 'Andrew

Bullmore'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; 'Andy McKenzie'; malcolm@hayesmckenzie.co.uk; Warren, John; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'; Jiggins, Mark; Kydd Sarah (DECC EDU)

Subject: Re: Wind Turbine Noise Working Group - Meeting

I think Mark L has jumped to the conclusion that AM is a product of wind shear (2 places) rather too readily. However, there is little else I disagree with. I've already had my go at chopping the minutes about so I won't do it again. I merely want to say that I think "proper" minutes would record what we agreed and what actions were to be taken - each in a short sentence. Apart from the list of attendees and apologies I suggest half to three quarters of a page would be enough.

Regards, Mark ----Original Message----

From: Mark Dorrington [mailto:Mark_Dorrington@uk.aeat.com]

Sent: 16 August 2006 10:43

Subject: NWG minutes

Alan,

I have captured all comments accept those recently provided by Mark L, most of his points are up for discussion and need to be resolved/agreed by the NWG before they are incorporated/or not. There are still some items that you and I need discuss.

I will give you a call to discuss above and recent emails on public enquires etc.

Mark.

Mark Dorrington
Future Energy Solutions
The Gemini Building
Fermi Avenue
Harwell International Business Centre
Didcot
OX11 OQR
United Kingdom

Tel: +44 0870 190 6102 Fax: +44 0870 190 6318

Email: mark.dorrington@aeat.co.uk

From: Legerton, Mark [mailto:Mark.Legerton@npower-renewables.com]

Sent: 16 August 2006 10:53

To: 'Dick Bowdler'; Legerton, Mark; 'Jonathan Perks'; 'Mark Dorrington'

Cc: 'Smith Alan (Mr A) EDU'; 'Jeremy Bass'; 'Geoff Leventhall'; Legerton, Mark; 'Andrew

Bullmore'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; 'Andy McKenzie'; malcolm@hayesmckenzie.co.uk; Warren, John; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'; Jiggins, Mark; Kydd Sarah (DECC EDU)

Subject: RE: Wind Turbine Noise Working Group - Meeting

For the avoidance of doubt, my point was that we don't know that wind shear is the root cause. I said "This assumes of course that wind shear is a root cause, yet to be proven, could equally be yaw misalignment." Could even be a different mechanism on different sites as there appears to be reports of the phenomenon with stall and pitch regulated turbines.

Mark

Dr Mark Legerton Development Manager - Wales npower renewables

Tel 0118 959 2440

From: Kydd Sarah (DECC EDU) Sent: 16 August 2006 11:57

To: Legerton, Mark; Dick Bowdler; Jonathan Perks; Mark Dorrington

Cc: Smith Alan (Mr A) EDU; Jeremy Bass; Geoff Leventhall; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; Alan Purdue; Helen Matthews; Andy McKenzie; malcolm@hayesmckenzie.co.uk; Warren, John; Bob Davies; Mike Anderson; Philip King; Mike

Raw: David Spode: Jiggins, Mark

Subject: RE: Wind Turbine Noise Working Group - Meeting

Mark

Thanks for the useful comments. I'd just like to pick up on a couple of the non-technical points:

- Publishing minutes I am afraid that we have no choice in this. Under the Freedom of Information Act any member of the public can ask to see all written (including emails) correspondence on any topic. We have already received requests asking to see minutes and if they are not made public a FOI request will follow. Therefore, we really have to make minutes available on the DTI website. I suggest that you all bear this in mind when agreeing them in the future - obviously we will only place finalised minutes onto the website.
- I totally agree that the 5th bullet is not required we have already received noise trade
 press questions on the reformation of the group, its membership and its ToRs with them
 mistakenly assuming that ETSU97 is to be reviewed in its entirety. Again, given FOI we
 no no option but to release this information and our Press Officer will be doing that later
 today.

I know that this is not ideal but it is the world in which we have to operate.

Thanks Sarah

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 16 August 2006 12:07

To: Kydd Sarah (DECC EDU); Legerton, Mark; Jonathan Perks; Mark Dorrington

Cc: Smith Alan (Mr A) EDU; Jeremy Bass; Geoff Leventhall; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; Alan Purdue; Helen Matthews; Andy McKenzie; malcolm@hayesmckenzie.co.uk; Warren, John; Bob Davies; Mike Anderson; Philip King; Mike

Raw; David Spode; Jiggins, Mark

Subject: Re: Wind Turbine Noise Working Group - Meeting

Sarah, Mark, all

Just to clarify the position I don't recollect that the meeting agreed that the scope of our work went anywhere beyond the issues raised in Malcolms report. Maybe someone has a better memory than me.

Dick

From: Kydd Sarah (DECC EDU) Sent: 16 August 2006 12:09

To: Dick Bowdler; Legerton, Mark; Jonathan Perks; Mark Dorrington

Cc: Smith Alan (Mr A) EDU; Jeremy Bass; Geoff Leventhall; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; Alan Purdue; Helen Matthews; Andy McKenzie; malcolm@hayesmckenzie.co.uk; Warren, John; Bob Davies; Mike Anderson; Philip King; Mike

Raw; David Spode; Jiggins, Mark

Subject: RE: Wind Turbine Noise Working Group - Meeting

Dick

No you are absolutely correct the group has been reformed to consider the report's recommendations on AM - this should be reflected in the minutes.

S

```
----Original Message----
From: Mark Jiggins [mailto:mark.jiggins@btinternet.com]
Sent: 18 August 2006 14:12
To: Kydd Sarah (DECC EDU); 'Legerton, Mark'; 'Dick
Bowdler'; 'Jonathan Perks'; 'Mark Dorrington'
Cc: 'Smith Alan (Mr A) EDU'; 'Jeremy Bass'; 'Geoff
Leventhall'; 'Andrew Bullmore'; 'Huw Thomas'; 'Bernard
Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue';
'Helen Matthews'; 'Andy McKenzie';
malcolm@hayesmckenzie.co.uk; 'Warren, John'; 'Bob Davies';
'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'
```

Subject: RE: Wind Turbine Noise Working Group - Meeting
Hi All

I think this raises a question. If at any time anyone could make a request for a copy of all e-mail correspondence then everything we might discuss could be presented at inquiry as evidence. Do we therefore feel that we should continue to debate these issues in the way we have up to now or perhaps meetings are the only way to do this, publishing minutes which reflect the very minimum required and all verbal discussion being unrecorded. Perhaps the open sharing of views may be compromised if at any stage all deliberations and discussions might become public.

Cheers Mark

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 25 August 2006 07:30

To: Andy McKenzie; mark.jiggins@btinternet.com; 'Jeremy Bass'; 'Smith Alan (Mr A) EDU'; 'Geoff Leventhall'; 'Legerton, Mark'; 'Jonathan Perks'; 'Andrew Bullmore'; 'Huw Thomas'; 'Bernard

Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews';

malcolm@hayesmckenzie.co.uk; 'Warren, John'; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike

Raw'; 'David Spode'; 'Mark Dorrington' **Subject:** Wind Turbine Noise Working Group

Hi All,

Maybe I can shift things on from the manipulation of facts to facts themselves. Just some thoughts.

I went up to Dun Law and Ardrossan this week with my ears and for the record will report my findings. V47s on 40m hub at Dun Law, V80s on 60m hub at Ardrossan. For the purposes of description assume the turbine is facing north that is to say there is a north wind. Depending on the ground I'm around 40m from the tower at Dun Law and 60m at Ardrossan. Both turbines are on the downstroke on the west and the upstroke on the east.

- To the north the position is as described by Oerlemans. Max noise on the downstroke probably a bit below the horizontal.
- To the north-west very similar to the north but the source a bit higher up as shown in Oerlemans misalignment.

- To the north-east the source has moved right down so that, depending on your position, the maximum can be almost at the point that the blade passes the vertical (passes the tower).
- On the east and the west the swoosh disappears completely if you find the right place.
- On the south and the south-west the effect is the same as the north and north-west.
- On the south-east there is an interesting (probably no more than that) effect. Because the sound is coming off the blade as it passes the tower there is a double swish. The swish starts, then it is screened as the blade passes the tower and returns as the blade re-appears.

No significant swish was heard beyond 200 or 300 metres - though I didn't get 360 degrees round a turbine to check all round.

I don't think time delay (from source to ear) has any significant effect on the above as I've tried to make a bit of a correction. I reckon that during the transmission from source to ear the turbine rotated 20 to 40 degrees depending on my position. Also the south-east effect (coordinating eyes and ears) gave me a bit of confidence.

My impresion is that the "Oerlemans swish" cannot be the problem that people complain of - at least not on its own. It is also clear to me that Oelemans was not measuring anything connected with wind shear but simply the directional nature of the noise - I say that because in the south-east and north-east the sound is coming from the blade whilst it is moving (nearly) horizontally. And I know my ears did not decieve me because the tower split the swish into two.

OK, so its not very scientific, but its a start.

Kind regards, Dick Bowdler

From: Malcolm Hayes [mailto:Malcolm@hayesmckenzie.co.uk]

Sent: 25 August 2006 10:21

To: Dick Bowdler; Andy McKenzie; mark.jiggins@btinternet.com; 'Jeremy Bass'; 'Smith Alan (Mr A) EDU'; 'Geoff Leventhall'; 'Legerton, Mark'; 'Jonathan Perks'; 'Andrew Bullmore'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; 'Warren, John'; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'; 'Mark Dorrington'

Subject: Re: Wind Turbine Noise Working Group

Dear All.

Oerlemans also provided some data for measurements when the turbine was off axis by up to 12 degrees. The effect is to move the source higher or lower as described by Dick

depending upon whether it was positive or negative yaw. (Clockwise yaw is positive looking from above) (Think I got that the right way round;))

Increased "blade swish" due to tower masking was identified by the RES work on noise measurements from wind turbines.

I also asked Oerlemans if he had undertaken high yaw error measurements and/or whether he had undertaken measurements at night or early evening. They had not taken any measurements at night when VdB suggests that his modulation will occur. They had some data for the evening but the intent of their measurements was to identify the main sources and locations of aerodynamic noise so they could start work on reducing these sources. trailing edge being the main source. They had not looked at data which might show a high yaw error on the turbine, only the directivity effect from the blade as the turbine moved from being off axis from the acoustic array.

One issue, discussed with Bob Davies when we listened to Oerlemans paper at Berlin, is what happens if one listens at the hub height of the turbine. One should hear continuous aerodynamic sound with little or no modulation. Will the tower then have any effect? It may be argued that a receiver at a distance might experience a similar noise to that of an observer at hub height. I think Askam might be the only site I can think of where one can listen to a turbine at close to hub height, but even so, I haven't heard any greater modulation associated with the tower at this location.

Furthermore, it seems that some turbines have blades that are more flexible than others. VdB assumed that the tips came quite close to the towers for the effect to occur, i.e. a 20 - 25% wind speed deficit. Whereas, depending on the turbine, a truer picture might be 5 - 15%. Talking with Mr Garrad a while back it seems that there was a period when some turbine manufacturers were engineering the blade construction such that they could get very close to the tower before shut down. As such, it might be that specific turbine types might result in increased tower/blade effects. The blade/ tower separation could be one of the variables we need to consider for any future analysis?

Finally, standing at 40 - 60 metres from a wind turbine blade will ensure that you have lots of the higher frequency swish. I would be interested if one recorded the sound and passed it through a third octave band attenuator which applied an ever increasing level of attenuation with increasing frequency (atmos. Absorp.) as this would remove most of the distracting HF swish to leave the 250 - 500Hz part which might start to sound a little more like what we have been considering within the LFN report.

Hope this adds to the discussion

Cheers

Malcolm D Hayes Hayes McKenzie Partnership Ltd. Lodge Park Tre'r-ddol Machynlleth POWYS SY20 8PL

Tel: +44 (0)1654 781400

NEW FAX NUMBER +44 (0)1654 703315

Web: www.hayesmckenzie.co.uk

This email may contain confidential information and/or copyright material. This email is intended for the use of the addressee only. Any unauthorised use may be unlawful. If you receive this email by mistake, please advise the sender immediately by using the reply facility in your email software.

Thank you for your cooperation.

From: Legerton, Mark [mailto:Mark.Legerton@npower-renewables.com]

Sent: 25 August 2006 11:03

To: 'Malcolm Hayes'; Dick Bowdler; Andy McKenzie; Jiggins, Mark; 'Jeremy Bass'; 'Smith Alan (Mr A) EDU'; 'Geoff Leventhall'; Legerton, Mark; 'Jonathan Perks'; 'Andrew Bullmore'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; Warren, John; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'; 'Mark Dorrington'

Subject: RE: Wind Turbine Noise Working Group

Alan, Jonathan, Mark

Should we be penciling in another date for a meeting, especially as we'll need reasonable notice to get a decent turn out.

Mark

Dr Mark Legerton Development Manager - Wales npower renewables

Tel 0118 959 2440

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 26 August 2006 22:21

To: Malcolm Hayes; Andy McKenzie; mark.jiggins@btinternet.com; 'Jeremy Bass'; 'Smith Alan (Mr A) EDU'; 'Geoff Leventhall'; 'Legerton, Mark'; 'Jonathan Perks'; 'Andrew Bullmore'; 'Huw Thomas'; 'Bernard Berry'; Marcus.Trinick@bondpearce.com; 'Alan Purdue'; 'Helen Matthews'; 'Warren, John'; 'Bob Davies'; 'Mike Anderson'; 'Philip King'; 'Mike Raw'; 'David Spode'; 'Mark

Dorrington'

Subject: Re: Wind Turbine Noise Working Group

Malcolm,

Unfortunately you were not able to be at the meeting at which some of these points were aired. My point at the meeting was (and I dont think anyone disagreed) that there were so far two theories for blade swish. The first was Oerlemans which - as you say in your email - would result in no swish at hub level and I suggest, by extension, no swish beyond a few hundred metres when the angle to the hub would be too small. The second, I suggested, was vdB who suggests a tower influence but without (as far as I can see) any justification. His "angle of attack" and shear or turbulence argument appear to me to be more credible than the tower.

The conclusion I felt from my subjective walk round turbines was that Oerlemans effect was merely directional and so (as you point out) at hub height and by extension at a distance there would be no swish. So my preliminary conclusion is that the Oerlemans effect is a red herring as far as any complaints are concerned.

Kind regards, Dick

```
----Original Message----
```

From: Mark Dorrington [mailto:Mark_Dorrington@uk.aeat.com]

Sent: 05 September 2006 15:29

Subject: Minutes of the NWG held on 2 Aug 06

Importance: High

** High Priority **

Dear All,

There is now increasing demand on the DTI to release the attached minutes into the public domain, would you therefore please confirm that the minutes (amended following NWG feedback) are an accurate record of the meeting. It is the DTI's intention to place minutes on the DTI website on the 11th September so please respond ASAP.

Many Thanks,

Mark.

Mark Dorrington
Future Energy Solutions
The Gemini Building
Fermi Avenue
Harwell International Business Centre
Didcot
OX11 OQR
United Kingdom

Tel: +44 0870 190 6102 Fax: +44 0870 190 6318

Email: mark.dorrington@aeat.co.uk

----Original Message----

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 05 September 2006 15:40

To: Mark Dorrington; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington Subject: Re: Minutes of the NWG held on 2 Aug 06

They're fine with me, Mark,

Kind regards, Dick Bowdler

----Original Message----

From: Mike Anderson [mailto:mike.anderson@res-ltd.com]

Sent: 05 September 2006 16:18

To: Mark Dorrington; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; John Warren;

Mark Legerton; Bob Davies; Jeremy Bass; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington Subject: RE: Minutes of the NWG held on 2 Aug 06

Mark

I don't agree with first sentence of the following paragraph.

"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."

The main conclusions were certainly discussed, but they were not agreed.

Some of them were, but certainty not the one relating to AM and ETSU-R-97.

I don't think that the statement:

"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."

adequately reflects the discussion at the meeting and the subsequent email correspondence. The levels of AM specified in ETSU-R-97 are consistent with those presented by Hayes McKenzie and therefore the conclusion is incorrect. Is this not what peer review is for?

On a final note I would have appreciated we had been informed at the outset that the meeting and possibly subsequent correspondence were a matter of public record.

$\cap \sim$	ard	
R L U	arc	\sim

Mike

From: Dick Bowdler [mailto:dick@newacoustics.co.uk]

Sent: 05 September 2006 16:27

To: Mike Anderson; Mark Dorrington; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen

Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie;

Malcolm@hayesmckenzie.co.uk; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Philip

King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington

Subject: Re: Minutes of the NWG held on 2 Aug 06

As I remember the issue requiring clarification from Malcolm was very specific. It was that he had stated (correctly) that ETSU says "as much as ± 6 dB(A) (peak to trough)." on page 68. None of us was certain whether this meant 12dB peak to trough or 6dB peak to trough. So it was a clarification of the original ETSU text that is required.

Regards, Dick

From: Mike Anderson [mailto:mike.anderson@res-ltd.com]

Sent: 05 September 2006 16:33

To: Dick Bowdler; Mark Dorrington; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen

Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie;

Malcolm@hayesmckenzie.co.uk; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Philip

King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington

Subject: RE: Minutes of the NWG held on 2 Aug 06

Either way the conclusions of Malcolm's report do not stand up to peer review and therefore until clarified I can't agree supporting the statement in the minutes of the meeting.

Given the amount of time which has passed since we had the meeting I am surprised that we have not been able to resolve this point and thereby correct or otherwise the report before anymore damage is done.

Regard	S
--------	---

Mike

----Original Message----

From: Geoff Leventhall [mailto:geoff@activenoise.co.uk]

Sent: 05 September 2006 18:00

To: Mark Dorrington; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com;

mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington

Subject: Re: Minutes of the NWG held on 2 Aug 06

In addition to comments by others:

Correct the name from Malcolm McKenzie to Malcolm Hayes (unless Malcolm would like to have some confusion on authorship).

Is there a contradiction in the terms of reference #3

"If appropriate, provide a means to assess and apply a correction where aerodynamic modulation is a clearly audible feature"

If the modulation is audible it's too late for a correction to be applied.

What is needed is a prediction , which we don't have yet, and then a correction (i.e. lower level) if audibility is predicted. The prediction will be an outcome of the research which is recommended at the end of the minutes. So perhaps:

"If appropriate, provide a means to assess and apply a correction where aerodynamic modulation is predicted to be a clearly audible feature"

Is the second recommendation at the end a bit weak in its permissiveness

"For future wind farm developments, developers may wish to allow some margin to allow for the noise created by this effect"

You can see this leading to two categories of developer - those who do and those who don't: goodies and baddies.

Are we able to say:

Either

Until further research has been carried out it is not possible to recommend any additional steps which can be taken with regard to amplitude modulation.

or

In view of the unpredictability of the AM effect all developers shall reduce their criterion level by XdB

Regards

Geoff

Dr Geoff Leventhall

Consultant in Noise Vibration and Acoustics 150 Craddocks Avenue

Ashtead Surrey KT21 1NL UK

Tel: (0)1372 272 682 Fax: (0)1372 273 406 geoff@activenoise.co.uk

From: Purdue, Alan [mailto:alan.purdue@castlemorpeth.gov.uk]

11011. Turdue, Alari [mailto.alari.purdue@castiemo

Sent: 05 September 2006 18:26

To: Geoff Leventhall; Mark Dorrington; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike Raw;

David Spode; Jonathan Perks; Mark Dorrington **Subject:** RE: Minutes of the NWG held on 2 Aug 06

Geoff, thanks for the web reference - the MP3 file was useful, ran a spectrogram on it and see what you mean. In relation to the minutes I was not present, but it is inevitable that LA's will apply the correction (if one is agreed) retrospectively. So the more general wording may well be appropriate and perhaps save dispute in the long run. Again I was not present but in general I believe that LA's will tend to either expect AM to be addressed in an application or start to put in a condition that AM will not occur. I know that colleagues will feel either of these to be

unreasonable given the current state of knowledge, and can only support the groups view on research. If in the meantime interim advice were to be issued that would be very useful.

Alan Purdue

Principal Environmental Health Officer Chartered Environmental Health Practitioner Pollution and Emergency Planning Coordination Castle Morpeth Borough Council 01670 794668

----Original Message----

From: Legerton, Mark [mailto:Mark.Legerton@npower-renewables.com]

Sent: 06 September 2006 10:34

To: 'Geoff Leventhall'; Mark Dorrington; Andrew Bullmore; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; Jiggins, Mark; Alan Purdue; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; Warren, John; Legerton, Mark; Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington

Subject: RE: Minutes of the NWG held on 2 Aug 06

Dear all

There is clearly too much here to be resolved by e-mail, especially given the guidance on Freedom of Information concerning e-mails and the notification after the meeting that the minutes would be public domain. The only way I can see of getting an agreed statement is unfortunately through a face to face discussion irrespective of DTI wishes to publish minutes by a given date.

Mark D - I think you need to start setting something up asap as diaries will already be full for the next 2-3 weeks.

By way of an example of the difficulty of agreeing minutes by e-mail, my earlier comment, endorsed by Sarah Kydd, seems to have been ignored!?

"From my understanding the fifth term of reference is broader than advertised. It could be misinterpreted as

suggesting that the whole document is under review. The third bullet sufficiently describes the action and is specific to AM."

Regards

Mark

Dr Mark Legerton Development Manager - Wales npower renewables

Tel 0118 959 2440

----Original Message----

From: Jeremy Bass [mailto:jeremy.bass@res-ltd.com]

Sent: 06 September 2006 12:52

To: Mark Dorrington; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; John Warren; Mark Legerton; Bob Davies; Mike Anderson; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington Subject: RE: Minutes of the NWG held on 2 Aug 06

Dear Mark et al

My comments are as follows:

- * in the 'Apologies' section, my name is spelt 'Jemery' it should be 'Jeremy'.
- * it is important that we define the context for Malcolm's work before discussing its conclusions. As I understand it, it was designed to try and find out what was causing a disturbance on a small number of occasions at a small number of properties at a very small number (3) of wind farms, this in the context of 131 wind farms in the UK overall.

- * in the first sentence of the section 'Review of the Hayes McKenzie Report', my understanding (from having spoken to some of the participants) is that the main conclusions of the report were discussed, but not agreed. If we agree with the conclusions as they stand, then surely the peer review process is finished? I don't believe that this to be the case.
- * in the 4th/5th sentences of the section 'Review of the Hayes McKenzie Report', the minutes conflate two things, i.e. (a) the fundamental mechanism by which blade swish/amplitude modulation is generated (for which various theories exist) and (b) the apparent increase in amplitude of blade swish/amplitude modulation in some circumstances (for which, again, various theories exist). This confusion occurs again later see, for example, the text following 'Identify and Agree Solutions'. I think we need to be quite rigorous in our use of terms if we are to transparently address this issue.
- * regarding the 2nd para of this section, it seems very unlikely that the levels of amplitude modulation measured by Malcolm should be a surprise to us. Mark Jiggins's MSc thesis, which he recently circulated and was widely circulated at the time (1997), clearly show levels of amplitude modulation of 15 dB peak to peak. Yes, we need clarification from Malcolm, but if it ends up being shown that his statements are incorrect then this needs to be made known.
- * I note that there is an action on FES to seek clarification from Malcolm Hayes (not McKenzie) on the amplitude modulation issue. Can I ask about the status of this action, given the Malcolm is back at his desk and it is now a month since the meeting? Autumn approaches!
- * the 12 month timescales for research into resolving this issue is far too long and we should be able to move much more quickly than this: indeed, as this issue is likely to cause serious planning issues for developers, I think it is essential that we do so. Surely, if increased levels of amplitude modulation are a significant enough problem for the NWG to issue interim guidance to 'stakeholders' right now, then the presumption is that this is a problem 'right now' and that therefore we ought to be able to go out and measure it 'right now'. If we can't, it

suggests that it is not an urgent problem and that no advice is necessary.

- * the suggestion, relating to measurements, that "some of this would have to be carried out in the summer months" contains the implicit assumption that a possible cause of this problem is stable/very stable atmospheric conditions. I don't believe that we have enough information to know this for a fact and, indeed, it rather prejudges the outcome of the measurements.
- * the 'Recommendations/Review of Actions' given at the end are confused. In the first paragraph it is stated that "there is currently insufficient evidence available on AM to recommend any change to ETSU-R-97. The second paragraph (advice to stakeholders) completely undermines this view by suggesting some actions which effectively do just that: they change ETSU-R-97. We either have one view or the other we can't have both!
- * we do not have enough information at present to present any reliable advice. As poor advice is worse than no advice, we should delete the advice completely.
- * if the advice is retained, the first bullet point should be rewritten as "In a very few cases, and on relatively few occasions, it has been observed that the amplitude of the blade swish/amplitude modulation noise emitted by wind farms can increase above the 'normal' levels. Whilst some theories exist to explain this, the precise cause is currently the subject of research interest and may result from one, or more, site specific features".
- * if the advice is retained, the second bullet point should be removed as this is a commercial consideration for developers. Further, as we can't be precise about the magnitude of this margin, we should not mention it. How will planners interpret this? 1 dB, 2 dB, 3 dB, 5 dB, 10 dB? Who knows? The level of the margin prejudges the magnitude of the penalty and we simply don't know what this should be, if anything, at present.
- * if the advice is retained, the word "further" should be inserted between "to" and "understand" in the third bullet point

- * to recommend that "developers may wish to allow some margin to allow for the noise created by this effect" and then glibly say "Existing developments (which have or are seeking consent) must be unaffected by this advice" is naïve: in the real world we all know that this part of the advice will be ignored. I wonder how many of the UK wind farms, which are currently operating without complaint, would still be operating within their noise limits were this additional margin to be retrospectively applied? Few, I imagine, to the benefit of no-one.
- * given that the wind industry is already facing some major setbacks at present, including: greatly increased turbine pricing; greatly reduced turbine availability; manufacturers exploiting their near dominance of the market; the offshore hiatus etc, placing additional, and as yet unjustified, constraints on developers is not going to be well received. It is not going to help achieve the national targets for renewables which the Government has set, quite the contrary.
- * my understanding is that the review of the NWG is to be evidence led, i.e. the only changes that will be allowed are those that are supported by incontrovertible evidence. I think it is fair to say that we don't have this evidence at present hence the peer review. Yes, we have some initial studies possibly indicating a key issue, but I don't believe this represents 'incontrovertible evidence'.
- I have 140 hours of continuous, DAT quality data made at a typical residential distance from a working UK wind farm and I am keen to analyse this to look at: the distribution of values of peak to peak blade swish/amplitude modulation; how this distribution varies with time of day, atmospheric conditions, level of background noise etc. Having been in contact with some of the industry experts comprising this group I have been advised that it is very difficult, if not impossible, to do this at present. If this is indeed the case - and I have to confess that this is currently outside my own technical abilities - then I don't understand how we are going to be able to reliably and repeatably measure/quantify this acoustic feature. It follows that, if we can't quantify it reliably, then any penalty that gets applied is going to be somewhat arbitrary and not meet with the universal support generally necessary for success.

* in general, I am slightly concerned that this peer review process has gone slightly off the rails, in that we appear to be doing it retrospectively - not something I've come across before! I may have a different perspective on this than other group participants, since I represent a wind farm development company and so have a very direct stake in the matter. This is clearly at variance with the perspective of those who are consultants, planners etc.

I hope these comments are helpful. All I've tried to do is flag up statements/issues that could be misinterpreted by those without the expert knowledge that those in the NWG possess.

Best regards

Jeremy Bass

Renewable Energy Systems Group

James Blyth House, 7000 Academy Park,

Gower Street, GLASGOW, G51 1PR, UK

Direct Tel: +44 (0)141 419 1737 General Tel: +44 (0)141 419 1730

Office Fax: +44 (0)141 427 9514 Mobile Tel: +44 (0)7789 680 963 Email: jeremy.bass@res-ltd.com

RES Web Pages: http://www.res-ltd.com

Embrace the Revolution and pledge your support for wind energy at www.embracewind.com

----Original Message----

From: Kydd Sarah (DECC EDU) Sent: 06 September 2006 13:47

To: Legerton, Mark; Geoff Leventhall; Mark Dorrington;

Andrew Bullmore; Huw Thomas; Bernard Berry;

Marcus.Trinick@bondpearce.com; Jiggins, Mark; Alan Purdue; Helen Matthews; Smith Alan (Mr A) EDU; Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; Warren, John;

Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike

Raw; David Spode; Jonathan Perks; Mark Dorrington;

Armstrong Kristian (Mr K) EDU

Subject: RE: Minutes of the NWG held on 2 Aug 06

Mark + as before ci: Kristian Armstrong

FOI rules state that any email or document held by DTI is subject to FOI. There are exemptions such as commercial reasons. There is not currently an FOI request for any information in this area but that is not to say there won't be in the future.

The minutes should record the TOR of the group and the actions arising these can then be published on the website – it is normal DTI practice that minutes are made public. There is I believe a misconception in both some of media reports and in some communication which Alan Smith has had with members of the public that the NWG is undertaking a review of ETSU97 as a whole which is not the case and never has been as this was not what the LFN report concluded or recommended.

I understand that it is difficult for a group of experts - not all of whom were at the meeting - to agree detailed minutes but a succinct record of the ToRs of the group and any actions should be published ASAP.

Best Sarah

----Original Message----

From: Jeremy Bass [mailto:jeremy.bass@res-ltd.com]

Sent: 06 September 2006 14:17

To: Mark Dorrington; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Helen Matthews; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; John Warren; Mark Legerton; Bob Davies; Mike Anderson; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington Subject: RE: Minutes of the NWG held on 2 Aug 06

Dear all

You may be interested in this link (sixth question), which relates to our Den Brook site in Devon: http://www.denbrook.co.uk/FAQS.html

As this web site shows, Malcolm's report is already being picked up by anti-wind farm groups to support their claims, and this is likely to increase in future.

It seems likely that the minutes of the NWG meeting will be used in a similar way - hence my concern that these are as neutral as possible.

Best regards

Jeremy Bass

Renewable Energy Systems Group

James Blyth House, 7000 Academy Park,

Gower Street, GLASGOW, G51 1PR, UK

Direct Tel: +44 (0)141 419 1737 General Tel: +44 (0)141 419 1730 Office Fax: +44 (0)141 427 9514

Mobile Tel: +44 (0)7789 680 963 Email: jeremy.bass@res-ltd.com

RES Web Pages: http://www.res-ltd.com

Embrace the Revolution and pledge your support for wind energy at www.embracewind.com

----Original Message----

From: Legerton, Mark [mailto:Mark.Legerton@npower-

renewables.com]

Sent: 06 September 2006 14:54

To: Kydd Sarah (DECC EDU); Legerton, Mark; Geoff
Leventhall; Mark Dorrington; Andrew Bullmore; Huw Thomas;
Bernard Berry; Marcus.Trinick@bondpearce.com; Jiggins,
Mark; Alan Purdue; Helen Matthews; Smith Alan (Mr A) EDU;
Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler;
Warren, John; Bob Davies; Jeremy Bass; Mike Anderson;
Philip King; Mike Raw; David Spode; Jonathan Perks; Mark
Dorrington; Armstrong Kristian (Mr K) EDU
Subject: RE: Minutes of the NWG held on 2 Aug 06

Mark D

Will you be re-issuing the minutes along the guidelines suggested i.e. list of attendees and apologies, terms of reference (having deleted bullet point 5?) and actions

agreed (but not recommendations). In that way all the discussion points should be removed.

Mark

Dr Mark Legerton Development Manager - Wales npower renewables

Tel 0118 959 2440

----Original Message----From: Smith Alan (Mr A) EDU

[mailto:Alan.Smith@dti.gsi.gov.uk]

Sent: 06 September 2006 19:20

To: Kydd Sarah (DECC EDU); Legerton, Mark; Geoff
Leventhall; Mark Dorrington; Andrew Bullmore; Huw Thomas;
Bernard Berry; Marcus.Trinick@bondpearce.com; Jiggins,
Mark; Alan Purdue; Helen Matthews; Andy McKenzie;
Malcolm@hayesmckenzie.co.uk; Dick Bowdler; Warren, John;
Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike
Raw; David Spode; Jonathan Perks; Mark Dorrington;
Armstrong Kristian (Mr K) EDU
Subject: RE: Minutes of the NWG held on 2 Aug 06

All,

Please see attached a FOI request for the NWG minutes from Nick Hoare. I have spoken at length to Nick about this and he is aware of the process that we are going through.

We will need to discuss this at the next meeting.

Alan

----Original Message----

From: Marcus Trinick [mailto:Marcus.Trinick@bondpearce.com]

Sent: 11 September 2006 12:51

To: Legerton, Mark

Cc: Kydd Sarah (DECC EDU); Jeremy Bass; Jonathan Perks; Warren, John; Jiggins, Mark; Dick Bowdler; Huw Thomas; Andrew Bullmore; Mark Dorrington; Alan Purdue; Andy McKenzie; Geoff Leventhall; Mark Dorrington; Bernard Berry; Malcolm@hayesmckenzie.co.uk; Mike Anderson; Bob Davies; Smith Alan (Mr A) EDU; David Spode; Mike Raw; Philip King; Helen Matthews; Armstrong Kristian (Mr K) EDU Subject: RE: Minutes of the NWG held on 2 Aug 06

I have stayed completely silent and watched the extensive exchange of emails following the last meeting. Just three quick thoughts:

- 1. I strongly suggest that the minutes which have to be made available either on a website or on an FOI request could do no more than Mark suggests. I don't see why the debate which took place has to be exposed.
- 2. Looking at Jeremy Bass's email of 6 September at 1517 on why the anti-wind farm groups are already picking up on Malcolm's report - he is right. At a recent inquiry in Cornwall Malcolm's report was produced by the opposition (I don't blame them - I would do the same). And the same will happen at Denbrook in November, and prior to that at Cambridge in October, and then again at Keadby in January, and so it goes on. This leads me to a suggestion which probably won't be popular with DTI for reasons I In the early 1990s the DTI provided a witness understand. to public inquiries on energy policy issues. Things were new and the need was felt to explain Government policy. Might it be possible to provide a DTI witness to explain the terms of reference of the current Noise Working Group discussions, and in particular to make it clear that the sole objective is to peer review Malcolm's report.
- If, which I guess I understand, no-one wants to turn up from DTI and get ritually hacked to death by others at the inquiry I hope that it might be possible for a letter to be issued with the same effect i.e. confirming the limited terms of reference at the discussions that we are having. Thoughts?

With best wishes,

Marcus

Dictated by Marcus Trinick but typed in his absence and therefore not checked by him for accuracy of content or detail.

Marcus Trinick Partner

for and on behalf of Bond Pearce LLP

DDI: +44 (0) 845 415 8370

Firmwide number: 0845 415 0000

Fax: +44 (0) 845 415 8200 Mobile: +44 (0) 7747 118762

www.bondpearce.com

----Original Message----

From: Mark Dorrington [mailto:Mark_Dorrington@uk.aeat.com]

Sent: 21 September 2006 10:13

Subject: Revised Minutes

Dear All,

I have attached the latest version of the draft minutes. These can be discussed and agreed, along with concerns surrounding FOI at the next meeting - dates will be circulated ASAP.

Thanks,

Mark.

Mark Dorrington
Future Energy Solutions
The Gemini Building
Fermi Avenue
Harwell International Business Centre
Didcot
OX11 OQR
United Kingdom
Tel: +44 0870 190 6102

Fax: +44 0870 190 6318

Email: mark.dorrington@aeat.co.uk

----Original Message----

From: Matthews, Helen (LEQ)

[mailto:helen.matthews@DEFRA.GSI.GOV.UK]

Sent: 25 September 2006 15:29

To: 'Mark Dorrington'; Andrew Bullmore; Geoff Leventhall; Huw Thomas; Bernard Berry; Marcus.Trinick@bondpearce.com; mark.jiggins@btinternet.com; Alan Purdue; Alan Smith (E-mail); Kydd Sarah (DECC EDU); Andy McKenzie; Malcolm@hayesmckenzie.co.uk; Dick Bowdler; John Warren; Mark Legerton; Bob Davies; Jeremy Bass; Mike Anderson; Philip King; Mike Raw; David Spode; Jonathan Perks; Mark Dorrington

Cc: Lartice, Jonathan (LEQ)

Subject: RE: Minutes of the NWG held on 2 Aug 06

Dear all

I attach some comments from Defra on the draft minutes of the 2 August meeting.

Would it be possible to add Richard Perkins to the email list as we attended the meeting together? His email address is perkinsr@pbworld.com (he is not in this office much but is wearing his Defra hat).

Thanks

Helen

Helen Matthews Noise and Nuisance Local Environmental Quality 7 D/11 Ashdown House 123 Victoria Street London SW1E 6DE

Tel 020 7082 8414