Response of Lauderdale Preservation Group to the Revised Proposals for a Wind Power Station on Corsbie Moor Reference 11/00888/FUL

June 2012

Summary

Lauderdale Preservation Group wish to reassert their objection to this proposal. We do not believe that the applicant has addressed significant issues raised following the original submission.

The key points of our continuing objection are as follows.

- Damage to residential amenity through visual impact.
- Damage to amenity and health from noise. *We ask SBC Environmental Health to reconsider their implied nonobjection to the proposal on noise grounds in the light of information which has recently become available.*
- Cumulative visual impact on important Borders sites.
- Irrelevance of the development to national energy security or global emissions.

We also have continuing concerns in connection with private water supplies, telecommunications, driver distraction, ecology and ornithology and the applicant's continuing failure to engage with residents of the affected communities.

Damage to Residential Amenity and Health

Scottish Borders Council's SPG on wind energy states a presumption that wind farms should not be built within 2km of habitation. In the original scheme there were 57 properties within 2km of a turbine. The removal of the three westernmost turbines would appear only to reduce this to 50 properties.

Other than to criticise SBC's policy the developer has given no justification for this disregard, nor have they indicated what alternative sites more remote from homes they have considered.

We accept that the change in turbine number would reduce the visual impact on Legerwood and somewhat reduce noise nuisance there.

We do **not** accept the claim that the visual impact on Kirkhill would now be insignificant. Although visibility from windows would be reduced, from the front of most properties, and in the approach to the settlement, the visual intrusion of the turbine blades cutting the skyline would be substantial. Noise, at over 35dB under standard conditions, is in our view likely to be unacceptable.

We are puzzled (and local residents are offended) by the curious statement in 5.8.24:

'There would be no effect on the living standards such that any property would become an unattractive place to live when judged objectively and in the public interest'.

Firstly, attractiveness or otherwise is by definition a subjective matter. Secondly, this is a for-profit development by a multinational energy company, not a charitable or community project, so that we cannot understand the invocation of public interest. It is certainly not in the interests of those members of the general public who live at Kirkhill.

Elsewhere, visual and noise intrusion would be essentially unchanged by the reduction in the number of turbines. The applicant's statement that turbines would now be further from homes is incorrect. The nearest turbine is now closer to Corsbie farm cottages. At Brownshall, the property worst affected by the proposal, distance to the two nearest turbines would change from 1093m and 946m to 967m and 949m.

We are particularly concerned with the impact on the three properties Brownshall, Langriggs and Hyndsidehill.

- Visual impact there is unchanged from the earlier proposal.
- We are not convinced that, given the uncertainties in evaluating its effects, shadow flicker will not be a problem at Brownshall. We understand that an extension to the living area of the property is 20m closer to the turbines, hence just within the applicant's stated 930m flicker zone.
- However, our worst concern here and elsewhere is with the potential for noise disturbance and consequent damage to health which we discuss separately in the Appendix.

If consented this development would damage the amenity and health of local people who will gain no benefit whatsoever from it.

Impact and Cumulative Impact on Important Borders Viewpoints

We do not propose to discuss these in detail but are happy to leave this to SBC's professional landscape architect.

However, we do not believe that the reduction in the wind farm footprint significantly reduces impact on Scott's View, Smailholm Tower, Twin Law Cairns, the Southern Upland Way, etc.

We are particularly appalled by the impact on Scott's View. Visitors travelling north, as most do, could be presented with an industrial landscape of turbines on Corsbie Moor, Brunta Hill and Fallago Rigg. One could hardly find a better (or worse) example of the meaning of cumulative impact.

We are also concerned by the impact on the A6089, an important tourist route between Kelso and Edinburgh. This road would be seriously affected by construction traffic; we note the recent incident in Northumberland where a wind turbine shaft falling from a vehicle has created a major disruption. The turbines would be larger and closer to a significant road than any previous development, creating a more serious adverse impact on visitors. The issue of shadow flicker on this road raised in our previous submission has not been addressed by the applicant.

Tourism is arguably now the Borders most important industry. In the present economic climate SBC should not risk damaging it.

Irrelevance to National Energy Security or Global Emission Reduction

The applicant has given no justification for the choice of a site significantly lower in altitude than current Borders wind farms, and therefore probably providing a poorer load factor. Although they have measured wind speed data they have still not used this but have simply suggested a range of load factors up to 35%, an improbably optimistic figure given that recent load factors at Dun Law and Long Park are around 20%.

Taking a generous 27% (UK rolling average) load factor, nine 2.3MW turbines would produce 48.95GWh annually, representing only 0.001% of the UK's energy needs, or those of 2,503 average households. (We feel that it is more appropriate to quote figures in terms of current overall energy consumption, rather than exclusively of electricity, for several reasons. a) Borders households are likely to be higher than average electricity consumers as many rural properties have no piped gas supply. b) Most electricity is not consumed in homes and most energy consumed nationally in homes is not electricity. c) Government 'targets' for CO2 reduction imply a shift to electricity from oil and gas.)

It is now well established that investment in wind power does not reduce the need to retain or replace conventional 'on-demand' generation capacity, due to the intermittent nature of wind, particularly its typical unavailability during the coldest winter weather.

It is clear that this development would make a negligible contribution to national energy security.

With regard to carbon dioxide displacement the applicant has estimated this on the basis of the BWE (the wind energy industry's trade association) assumption that every MWh of wind energy simply displaces conventional generation at its average cost in emissions.

On this basis Corsbie Moor could in principle displace about 21,000 tonne of CO2 annually.

However, informed opinion is now quite clear that simple replacement does not occur. Because of the need for a 'spinning reserve' of on-demand power to cover wind's short term intermittency, conventional capacity must be kept running at very low efficiency to provide backup, and must be ramped up and down, resulting in further inefficiency. In the worst case this can completely eliminate any CO2 savings. (See, e.g. the submission of Sir Donald Miller, past chairman of Scottish Power, to the Scottish Parliament Committee on Renewables Targets, February 2012).

Even if this implausibly optimistic figure were accepted, it would represent only 0.0038% of the UK's annual emissions, and more significantly, a mere **1.2 minutes** of China's current emissions.

A good way of assessing the global implications of a renewable energy proposal is to estimate, in the context of rising world emissions, how long it would take for the rest of the world to add new emissions to negate whatever savings it might make. In effect, this would be an estimate of how long the proposed development could delay whatever effect global emissions may be having on climate change.

Since India and China (the main sources of new emissions) are currently adding over 100 million tonnes of new emissions every month, **we can calculate that Corsbie Moor might delay climate change by around 10 minutes.**

There is no justification for this development in terms of climate change amelioration.

Further Issues

- The applicants have made no contingency plans to supply water to properties at Kirkhill or Corsbie in the event of disruption of their supplies in the area where works will be carried out.
- The applicants have not shown that shadow flicker could not affect drivers on the A6085.
- In connection with telecommunications the applicants have not demonstrated that mobile Telephony and analogue FM radio would not be adversely affected, but have merely made general statements on the subject.
- Our ecology consultant is concerned that a targeted botanical survey of Pickie Moss has not been carried out, ond that its hydrology has not been fully investigated to ensure that it will not be affected by run off from the site. He would have expected breeding populations of both snipe and water rail to occur on Pickie Moss and is concerned that their absence from the original ornithological survey indicates that this area was not properly investigated.
- We note the applicant's continuing failure to engage with the local community and their attempts to create the impression of public support by targeting people in unaffected communities without providing them with relevant and unbiased information.

Appendix: Reassessment of Potential Damage to Amenity and Health from Turbine Noise

The applicant claims that the proposal meets the noise guidelines of ETSU-R-97. In their response SBC Environmental Health restate the formal ETSU criteria, implying that they have no objection.

We believe that there are grounds for refusal due to loss of amenity and risk to health and ask SBC to reconsider their position on this issue.

We note that ETSU-R-97 criteria are only *guidelines*. Although they are the Government's 'preferred' means of assessing wind farm noise, they in fact have no statutory basis. The noise levels they set are arbitrary and have no scientific basis as they were drawn up by a committee none of whose members was qualified to assess the effects on noise on people. Their many deficiencies have been well described by Bowdler [1].

If Scottish Borders Council believe that these guidelines provide insufficient protection to the amenity and health of Borders residents, we consider that they are both entitled and obliged to apply more stringent criteria.

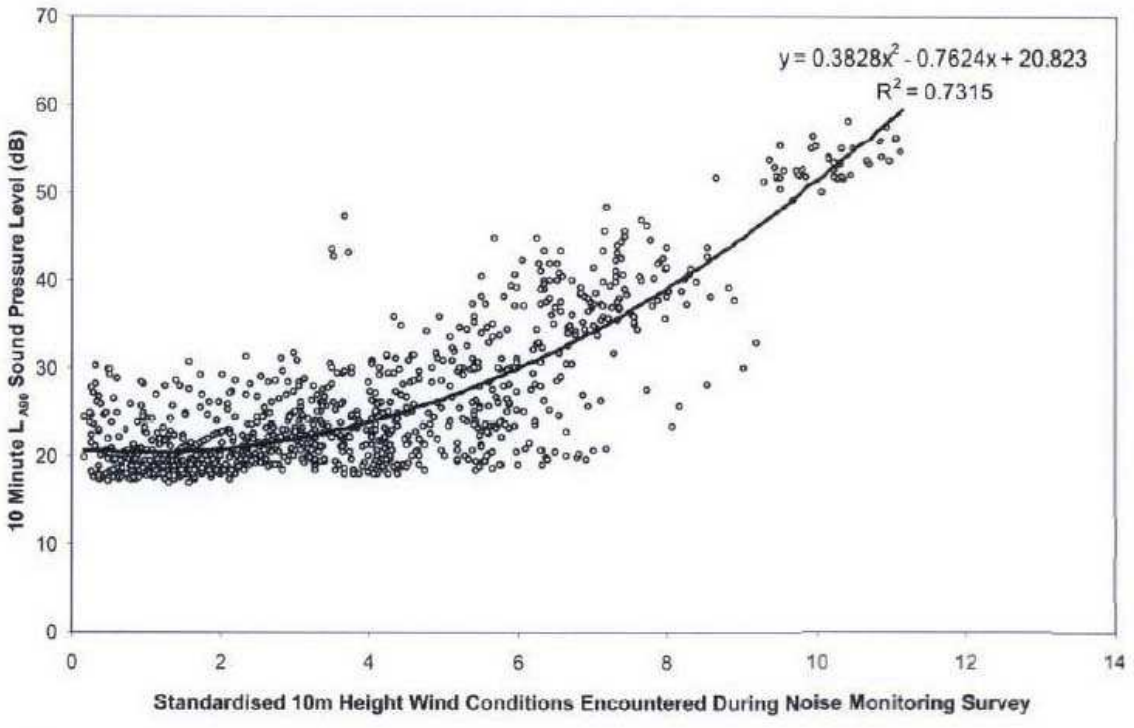
We state three main reasons why we believe SBC should reconsider their response in the light of additional information, some of which has become available only since the initial application.

- The reliance on masking noise for ETSU-R-97 compliance.
- The documented loss of amenity near existing local wind farms which were deemed (and may indeed be) ETSU compliant.
- The now-established risks to health from noise levels below 35dB.

Masking noise

Properties at Kirkhill, Corsbie and Brownshall would be subject to noise levels above 35dBA. (**Note that our calculations of turbine noise at the last put this 2dB higher than claimed by E.ON. As we are in agreement on their other predictions the applicant's figure should be independently checked.**)

The applicant claims that these levels are acceptable as they meet the daytime limit of background noise plus 5dB specified by SBC Environmental Health. However turbine noise has a distinctive quality which distinguishes it from natural wind noise (see e.g. [3]). It can thus be audible through background noise. Furthermore the use of average background levels ignores the fact that there will be times when actual instantaneous background noise is at a lower than average level. It can be seen from the applicant's graph below (N5 night time) that at, e.g. 6m/s wind speed, for a significant amount of time background noise levels are 17-18dB although the average is 30dB. Thus turbine noise of around 33dB would be 15dB above actual background, representing a perceived threefold increase in ambient noise, very clearly audible and disturbing.



Background noise is no longer accepted as a factor in assessing turbine noise in the Netherlands and some Canadian provinces [2].

We are also concerned that the background noise levels recorded by Eon appear to be surprisingly high for a rural location. They are e.g. higher than those recorded at Wooplaw in connection with application 11/01175/FUL. It was also noted that Wooplaw noise levels measured in 2011 were lower than those recorded earlier by the developers of Longpark. Such variability has been observed by others. Amongst

possible reasons the variation could be seasonal. Corsbie Moor monitoring took place between 20/8/10 and 10/9/10, at a time when foliage on trees might be expected to increase wind noise. A sample of just over 5% of the year in a single season does not seem to us to be a reliable guide to conditions over the whole year.

Loss of amenity near existing local wind farms

Two operating wind farms in the Borders, Longpark and Toddleburn, have given rise to complaints from residents within 1km. SBC Environmental Health are aware of both cases. In this connection we would refer to two precognitions submitted by objectors at the current public inquiry for the Rowantree wind farm.

That of Glennie [3] presents a graphic account of the distress caused by the Toddleburn turbines. That of Strang Steel [4] reports the problems caused to residents at Wooplaw from the Longpark turbines and that these are audible at Threepwood, nearly 3km away.

A matter of particular concern arising from the Glennie precognition is that the worst problems occur at periods of low local wind speed, confirming the position that background noise masking does not occur, and suggesting that noise levels below the ETSU guidelines can cause distress.

Corsbie farm cottages, Brownhall and Langriggs are at comparable distances from the proposed Corsbie turbines. It is thus almost certain that they would experience similar noise disturbance and damage to quality of life.

Risk to health

The distress caused to those living near wind farms from noise has been extensively reported but dismissed by both developers and politicians. It has been clear to those with no financial or political interest in wind energy that actual damage to health, probably caused by stress resulting from sleep deprivation, has occurred. This too has been vehemently denied by interested parties.

However, the matter has now been reported in the prestigious peer-reviewed British Medical Journal [5] and so cannot be lightly dismissed.

Research reported in [5] suggests a risk to health from turbine noise levels as low as 30dBA, particularly to children.

Scottish Borders Council has a duty of responsible care for the health of the people of the Borders. Adopting a precautionary position appropriate to safeguarding public health, we believe that they should refuse any wind turbine application where the absence of threat to health cannot be positively established.

On this basis Corsbie Moor could pose a significant health risk to residents of Brownshall, Langriggs, Hyndsidehill and Corsbie, probably to residents of Kirkhill and possibly to some residents of Legerwood.

References

[1] Dick Bowdler, *ETSU-R-97, Why it is Wrong*, July 2005

[2] JP Harrison, *Wind Turbine Noise*, Bulletin of Science, Technology and Society, 31, 256, 2011

[3] Patricia Glennie, Precognition to Rowantree PLI, February 2012

[4] Colin Strang Steel, Precognition CCG12 to Rowantree PLI, February 2012

[5] CD Hanning and A Evans, *Wind turbine noise seems to affect health adversely and an independent review of evidence is needed*, British Medical Journal editorial, 8 March 2012