Town and Country Planning Act 1990

Appeal by Broadview Energy Developments Limited
Site at Spring Farm Ridge between Greatworth and Helmdon

Planning Inspectorate Reference: APP/Z2830/A/11/2165035

South Northamptonshire Council Ref: S/2010/1437/MAF

REBUTTAL PROOF OF EVIDENCE

of

Robert A Davis BSc(Eng) MIOA

on

Noise Issues

On behalf of the Helmdon, Stuchbury and Greatworth Windfarm Action Group (HSGWAG)

September 2013

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Introduction

1 I have examined the proof of evidence of Stephen Arnott on noise, and wish to make a number of points in response for the purpose of further identifying areas of difference between us. I refer to paragraph numbers in Mr Arnott's proof. Where I do not comment here about a part of Mr Arnott's evidence it should not be assumed that I accept it.

The nature of the area

2 At 3.2, Mr Arnott describes his impressions of the '*soundscape evident on the established footpaths and bridleways across the site'.* Although not stated, I assume that his opinion is that this description applies generally to the area around the site, including the curtilages of dwellings. His description seeks to portray the area as being far from tranquil. In support, he draws attention to notes made by residents during the period of the background noise surveys; these notes are attached in Appendix 6 to the noise assessment in the ES.

3 I understand that residents who will speak at the inquiry would be able to comment on Mr Arnott's description of the nature of the area, and the Inspector would be able to appreciate it from his accompanied and unaccompanied site visits to the locality, but my impression of the local 'soundscape' differs markedly from Mr Arnott's, as I explain below.

4 I visited the area around the site on Friday 20 September 2013 between about 9.30 am and 2.30 pm. The weather was fine, with a light breeze from the north-west. I viewed the dwellings closest to the site (the receptors H1-H11 in the ES), and spent some time on foot in the vicinity of houses, and in the villages of Helmdon, Greatworth and Sulgrave. I also walked along a section of the BOAT which runs southwards from Stuchbury Hall Farm to the B4525, and footpath AN10 which crosses the BOAT close to the proposed locations of turbines 2 and 3.

5 At most locations, the dominant noise sources were wind in trees, birdsong, and 'rural' sounds including livestock (cattle). At Stuchbury Hall Farm I spoke with members of the Tims family. I asked Mr Tims about the use of the BOAT (which

runs quite close to the front of the farmhouse in full view of the house) by 4x4 vehicles and motor bikes. Mr Tims told me the BOAT was used by vehicles and motor bikes only very occasionally, mostly at weekends They would usually be in small groups; noise from these vehicles might be audible for 'a few minutes only' in any week and in some weeks the BOAT was unused except by walkers. He pointed out the field on the Spring Farm land, to the south-east, where he said that tanks could sometimes be seen moving, although these were only audible in the 'right' wind direction and again these activities were only occasional. Noise from the Silverstone race circuit could be audible on some days, such as during the British Formula One Grand Prix, but only once or twice a year, again depending on wind direction. Whilst I was there the only 'man-made' sounds I heard from the surrounding area were from an occasional vehicle on the lane between Sulgrave and Helmdon, and a passing light aircraft. Overall, my impression was of a very peaceful and tranquil location.

6 My experience was similar at other locations in the area, except that traffic noise from the B4525 was sometimes audible at properties within about 1km of this road. I noted traffic noise as being 'just audible' at Grange Farm, Fatlands Farm, Greatworth Hall and Astral Row (at the northern end of in Greatworth) and on footpath AN10 at its junction with the BOAT, and I would expect it to be audible in most wind directions at houses such as Stuchbury Manor Farm, Bungalow Farm, Spring Farm, Ash Vale and Redlands house which are relatively close to the road. I also noted a number of overflights by light aircraft: I am aware that there are small private airfields at Turweston, about 4 km east of Brackley and at Hinton-in-the Hedges, a similar distance to the west of Brackley. However, noise from traffic and aircraft was occasional and generally of short duration and did not, in my judgement, significantly detract from the generally peaceful nature of the area. My visit was during the working day: I would expect traffic and aircraft movements to be even less frequent during the evenings and at night, which (for noise) are the periods of most concern here.

7 Mr Arnott refers again to the nature of the area at 5.9 in his proof, contrasting the noise environment at Rossie (a decision to which I refer in my proof – CD 6.32) with what he says is the situation here, identifying "*large-scale agriculture, war games, car crushing and adventure sports"* as being significant sources of noise at Spring Farm Ridge.

8 Some agricultural activities (using tractors, harvesting etc.) may create noise for extended periods, sometimes during the evenings or overnight, but on relatively few days per year. During my visit to Grange Farm on 20 September I did at one point hear machinery working in the open fields to the west, although I could not identify the source or its exact location and the noise was not intrusive. My experience is that residents in country areas accept occasional noise from farming activities as being part of country life and they do not adversely affect the perceived peacefulness of an area.

9 Planning permission for the business at Spring Farm, which involves tank driving and other 'adventure' activities, was granted in August 2012. The planning application was retrospective, the activities having been carried on for about 9 years previously. In the SNC planning officer's report on the application the environmental health officer's comment was that noise from the site was 'not considered significant' and raised no objection to the application. A condition was proposed that would have the effect of prohibiting shooting on Sundays and Bank Holidays, and on other days except between 9 am and 6 pm. This condition was subsequently attached to the planning permission.

10 I note from the decision letter following the previous inquiry that the Inspector herself refers to the tranquillity of the area (at 20) and the peaceful tranquillity of the area (at 31) as well as making another similar reference at paragraph 47. The Inspector also refers (at 79) to the 'loss of a perception of tranquillity' in respect of footpath AN10: this comment is made in the context of the visual impact of the turbines, but it seems unlikely that she would have used these words if she considered that the area could not reasonably be described as 'tranquil' because of the presence of intrusive noise.

11 From my visit to the site, from information provided by residents, and from observations made by SNC officers and by the Inspector at the previous inquiry, I find no evidence that the 'noisy' activities Mr Arnott identifies result in noise audible at the dwellings in the area, except very occasionally and for short periods of time. I would expect them to occur even less frequently, if at all, during the evenings and at night. Certainly the residents' logs provided by Mr Arnott record few 'events' at these times.

12 I therefore consider that in his proof Mr Arnott exaggerates the extent to which the area is affected by noise sources that might be considered as being out-of-character with a quiet rural area. Contrary to Mr Arnott's comments, all the available evidence points towards this being a peaceful and tranquil area.

Effects of HS2

13 Mr Arnott raises the issue of noise from the proposed HS2 high-speed rail link. The current proposed route passes close to Greatworth Hall. Mr Arnott observes that predicted noise contours in the draft HS2 ES [CD 14.1] show noise levels of 60-65 dB L_{Aeq} near to Greatworth Hall and (by calculation) a level of around 45 dB L_{Aeq} at Bungalow Farm when trains are running.

14 Mr Arnott claims that when HS2 is operational '*background noise levels will increase very significantly'* and that therefore that '*the current basis of assessment for wind turbine noise* (i.e. using current background noise levels) *would overestimate the impact from turbines'.*

15 I disagree with Mr Arnott that 'background noise levels would increase very significantly' when HS2 is operational. The noise levels Mr Arnott refers to are time-average (L_{Aeq}) levels, which will be determined by the relatively high levels occurring during train passbys. However, these noise events will be of short duration, since the design speed of the track is 360 km/hour and train noise would be audible for only brief periods. The planned number of train movements during 'Phase 1' operation (the London-Birmingham route) is 14 trains per hour, rising to 18 tph when the Phase 2 extensions to Manchester and Leeds are operational. Although I have not carried out precise calculations, my view is that noise from HS2 trains would have little effect on the L_{A90} background noise levels. Therefore a noise assessment carried out with HS2 operational would not, in my opinion, lead to a result significantly different from the current assessment.

16 Furthermore, the route for HS2 has not been finalised, and there is no certainty that the scheme will proceed. If it does, I believe that the earliest date for start of operations (Phase 1) is 2026: If the wind farm is granted planning permission it is likely to be operational for many years before HS2 traffic is running. Mr Arnott concludes that the subsequent development of HS2 is '*not material to this appeal in*

respect of noise'. I agree, but (as I read his proof at 4.14) he reaches this conclusion on the grounds that the noise assessment shows that the wind farm noise would comply with current government guidelines anyway, based on the current background noise levels, and therefore there is no need to take any account of future increases in background noise levels to demonstrate the acceptability of noise. We therefore agree that HS2 is not a material issue, but for different reasons.

17 I am concerned that this (unnecessary) reference to HS2, in conjunction with the statements in 3.2, might be interpreted as suggesting that not only is this not a tranquil area now, but that it will inevitably become much less tranquil in the near future, and that therefore the noise impact of the wind farm would be small, and diminishing. I reject this implication: it does not reflect reality.

Noise affecting public rights of way

18 In my proof at 8.7 I refer to noise levels affecting footpaths and report my estimates of noise levels at the closest points of approach of footpaths to the proposed turbine locations. Mr Arnott's Appendix 3 helpfully provides a more detailed noise contour map: this shows that on footpath AN10 noise levels from operating wind turbines would be between 51 and 54 dB L_{A90} at a wind speed of 10m/s (and therefore from wind speeds about 8m/s upwards) which agrees with the estimates in my proof. I am content that this contour plot can be referred to privi8de an indication of the impact of wind turbine noise on the PROWs.

19 At 5.9 Mr Arnott repeats his (disputed) assertion that the area around the site is subject to noise from '*large-scale agriculture, war games, car crushing and adventure sports*' and also that '*any potential impact upon amenity for those using the footpaths must reflect this, together with the limited duration of their exposure crossing the site'.*

20 I have addressed the 'nature of the area' point in 2-17 above. Further, in my opinion the fact that people using a footpath such as AN10 would only be exposed to noise for short periods, whilst they walk past the turbines, is of limited relevance. People generally use rural footpaths for leisure and relaxation, rather than for making essential journeys. If the environment surrounding a previously quiet

footpath route is degraded by the introduction of equipment generating noise levels around 55 dB (A) I believe that people would choose not to use it, and the use of that footpath would therefore effectively be lost to them. Therefore in my view the effect of noise on these public rights of way is a matter to be taken into account.

The Council's decision not to refuse on noise grounds

21 Mr Arnott states that '*the Council no longer consider noise to be a reason for refusal'* (2.5) and that '*the Council have made no noise objection on amenity grounds'* (5.28). As I understand the sequence of events, the Council did originally cite noise as a refusal reason, but withdrew that reason following the submission of the FEI prior to the first inquiry, on the grounds that the changes in layout had resulted in turbine noise at dwellings being reduced to levels the Council viewed as being satisfactory. The Council's original reason for refusal said that the noise assessment had failed to clearly demonstrate that there would not be injurious effects on the residential amenity of nearby properties in terms of noise disturbance. Comparing the predicted noise levels at the receptors (ES Tables 6.4 and 6.5, FEI Tables 12.6 and 12.7) the changes in predicted noise levels between the FEI and the ES are negligible, being no more than 0.2dB at any receptor at any wind speed. These negligible changes, on their own, could hardly justify the Council's change of position.

22 I appreciate that it is for a Council, in refusing an application, to decide on the reasons for refusal to pursue at appeal. In this case my opinion is that the grounds cited in the EHO's consultation response for the planning officer's report for the SNC Planning Committee remain valid. The fact that the Council decided prior to the first appeal to withdraw their noise reason for refusal should not be taken to imply that the Council's officers were, or ought to have been, satisfied that the scheme was satisfactory in terms of its noise impact, and should not detract from the validity of my evidence.

Alternative approaches to noise assessment

23 Mr Arnott refers at 5.8, 5.9 and 5.28 to '*alternative assessment methods'*. In my note for HSGWAG of December 2010, and in my evidence to this inquiry, I explain why I consider that consideration should be given not only to compliance with noise limits derived from ETSU-R-97, because ETSU-R-97 is not the 'complete answer'. I object to Mr Arnott's use of the word 'alternative' which implies that I reject the guidance in ETSU-R-97. The opinion I set out in my proof of evidence includes additional, and not alternative, noise considerations. Compliance with noise limits derived from ETSU-R-97 is not the one and only consideration in assessing the effects of the appeal development in relation to noise.

Impact on amenity

24 At 5.3 and 5.5 Mr Arnott relates changes in noise levels to degrees of perception and loss of amenity. He identifies an increase of 5dB above background as representing a '*moderate loss of amenity'* during the quiet daytime period. I would agree with this statement but would not restrict it to the quiet daytime period: the same response to a noise increase would not occur during the night (11 pm - 7 am) when a resident might be inside a house but awake. If an increase of 5dB equates to a 'moderate' loss of amenity then an increase of 10dB (a 'doubling' of loudness) or more, as would occur here during the night, must result in a loss of amenity substantially greater than 'moderate'.

Outstanding issues

Turbine Sound Power Levels

25 In the TNEI Note of 7 August 2013 ('IoA Good Practice Guidance Review') Mr Arnott applies values of Sound Power Level for the Vistas V90 wind turbine to derive the predicted noise levels shown on the figures and tables on pages 8 -18 of that Note. The values actually used as input to the predictions are not stated in the report and no supporting information, such as manufacturer's test reports, was provided. The IoA GPG (at 4.3.6 and 6.1) recommends that this information is provided in any wind turbine noise assessment. I asked Mr Arnott to provide this information: I received copies of manufacturer's data on 4 September and (after

further requests) on 19 September I received confirmation of the values actually used for noise predictions.

26 From examination of this information I can now confirm that the values of Sound Power Level for the Vestas V90 2.0MW turbine, as used by TNEI for the noise predictions in the Note of 7 August, appear to include an appropriate correction for uncertainty and are therefore appropriate values which accord with good practice recommendations in the IoA GPG.

Directional analysis

27 As explained in my proof at paragraph 6.14 it may be necessary to carry out directional analysis of background noise levels to derive appropriate noise limits for dwellings such as Ash Vale, Bungalow Farm, Greatworth Hall and those at Greatworth which lie to the south and south-east of the site. Mr Arnott rejects the need for directional analysis (his proof 5.11, and Appendix 1 page 6). As recorded in my proof at 10.3, I asked him to provide further information.

28 I received further comment on this issue from Mr Arnott in his email of 19 September (appended to this proof), in which he confirms that in his view directional filtering is not appropriate, although he provides no additional data analysis to demonstrate that background noise levels at this site are not dependent on wind direction, and to an extent that would influence the outcome of the TNEI noise assessment. I anticipate that I may need to submit an additional note on the directional analysis issue, depending on the outcome of further discussions with Mr Arnott.

Declaration

29 I declare that this additional evidence which I have prepared and provide for this Appeal is true and I confirm that the opinions expressed are my true and professional opinions.

Appendix

Copy of email from S Arnott (TNEI) dated 19 September 2013

From: Stephen Arnott [mailto:stephen.arnott@tnei.co.uk]
Sent: 19 September 2013 17:29
To: Bob Davis
Subject: Re: FW: Spring Farm Ridge - Noise

Bob, I must apologise for the delay. I've been away at another inquiry for Broadview and unfortunately my instructions to forward the information in my absence were overlooked.

Attached please find the data used in the modelling for the V90.

In regard to directional filtering, The IOA GPG notes;
SB19: Directional analysis of prevailing background noise levels may be necessary in specific circumstances, where a wind farm is located upwind of a receptor but a significant contributor to the background noise environment is downwind of the receptor in the same wind conditions.

Significant contributors are described (at 3.1.23 of the IOA GPG) as large industrial sources (e.g. oil refinery), motorways, large conurbations and the sea. None of these are relevant to Spring Farm Ridge. It does not suggest that minor roads such as B4525 are included. Neither is the A43 comparable to motorway and at about 4km distant is not significant.

For the dominant SW wind (assuming 45° either side)
The windfarm is upwind of H1, H3 , H8 & H9. The nearest significant noise source downwind is the M1 20km, away which is not relevant.

For the frequent W wind
The windfarm is upwind of H3 (and other receptors in Helmdon). The nearest significant noise source downwind is the M1 28km away, which is not relevant.

For the S wind
The windfarm is upwind of H1,H8,H9,H10. The nearest significant noise source is >10km distant.

For the E wind
The windfarm is upwind H6, H7, H8 & H10. The nearest significant noise source (the M40) is >10km distant.

For the N wind
The windfarm is upwind of H4, H5, H6, H7 & H11. The nearest significant noise source is >10km distant.

On that basis I do not consider directional filtering is appropriate.

I've also considered whether the filtering for birdsong undertaken as part of the IOA GPG is helpful here; this was based on the time relationship to sunrise and sunset and the rapid onset or change in levels. The updated graphs indicated the data points removed occured under all wind directions, which suggests the higher noise levels were not traffic related in any way but were in fact birdsong.

If you have a form of words you prefer for a statement of common ground then let me know.

Regards,
Stephen

Principal Associate Consultant
TNEI Services Limited