Appeal Decision

Inquiry held on 9, 10, 11, 12 & 15 December 2008

Site visit made on 16 December 2008

by Ruth V MacKenzie **BA(Hons) MRTPI**

an Inspector appointed by the Secretary of State for Communities and Local Government

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Decision date:
9 March 2009

Appeal Ref: APP/F2605/A/08/2089810 (ex 1174295)
Near Wood Farm, Shipdham, Norfolk

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant planning permission.
- The appeal is made by Ecotricity against the decision of Breckland District Council.
- The application, Ref No 3PL/2004/0313/F dated 29 September 2003, was refused by notice dated 4 January 2005.
- The development proposed is the erection of two wind turbine generators, each with a maximum hub height of 65m and a maximum tip height of 100m.
- **This decision supersedes that issued on 23 June 2006. That decision on appeal was quashed by order of the High Court.**

DECISION

1. I dismiss the appeal.

PROCEDURAL MATTERS AND BACKGROUND INFORMATION

2. A planning application for 3 turbines was originally submitted in 2001. The proposal was later amended to 2 turbines, and it was dismissed on appeal. The Inspector concluded that there was insufficient information to illustrate that the resultant noise climate would not give rise to disturbance to nearby residents (Appeal ref: APP/F2605/A/03/1109816).

3. A fresh application for 2 turbines was made in 2003. The Council refused planning permission because of the effect that the turbines would have on the radar systems at Norwich International Airport (NIA). An appeal was lodged and an Inquiry was held in 2006. On the first morning of the Inquiry, NIA withdrew its objection. The Inspector allowed the appeal, and granted planning permission subject to various conditions. One of the conditions, relating to noise, was successfully challenged in the High Court. The decision was quashed, and I was appointed to re-determine the appeal.

4. At my Pre-Inquiry Meeting on 23 September 2008 I confirmed that I would be determining the appeal afresh. The Inquiry proceeded on the basis that, where written evidence remained unchanged since the 2006 Inquiry, it was not necessary to spend time going over the same ground.

5. The Inquiry sat for 5 days between 9 and 15 December 2008. On 16 December 2008 I made an accompanied visit to the site and its immediate surroundings. I also made unaccompanied visits to the wider surrounding area, including the wind turbine sites at Swaffham, North Pickenham and

Deeping St Nicholas. In the evening, I made an unaccompanied visit to Grays Farm, near the Deeping St Nicholas wind farm. The owners of the farm no longer spend the night in their farmhouse because of sleep deprivation which they blame on the nearby turbines.

6. Since the withdrawal of NIA's objection in 2006, the Council has taken a neutral stance in this appeal. It did not play an active part in the Inquiry, except when planning conditions were being discussed.

7. Objections to the proposed turbines come principally from the members of 2 local organisations: Campaign against Turbines at Shipdham and Scarning (CATSS); and Residents of Daffy Green (RoDG). Support for the proposal comes principally from Challenge Against Nimbyism in Shipdham (CANIS).

8. When the application was submitted in 2003, the description of development specified the Enercon E66 turbine. Time has moved on, and the E66 is no longer available. As a result, in October 2007 Ecotricity amended the description of development. It now refers solely to the 65m hub height and 100m tip height of the proposed turbines, and makes no mention of a specific model. However, Ecotricity's Further Environmental Information (FEI) of August 2008 (Core Document CD 58) is based on the proposed installation of two Enercon E70 turbines, with a hub height of 64m and a tip height of 99.5m. Each turbine would have a maximum rated power mode of 2.0MW.

MAIN ISSUES

9. I consider that the main issues in this appeal are:

   - the effect of the proposed turbines on the living conditions of nearby residents, with particular reference to noise;
   - the impact of the proposed turbines on the character and appearance of the surrounding area.

PLANNING POLICY

10. There have been several changes to planning policy since the 2006 Inquiry. The Regional Spatial Strategy for the East of England (RSS) was published in May 2008 (CD63), and has become part of the development plan. RSS policy ENG2 sets renewable energy targets for 2010 (10%) and 2020 (17%).

11. The Norfolk Structure Plan 1999 has expired. Ten policies were saved by a Direction in September 2007 (CD61), but none of the saved policies has any direct relevance to renewable energy. The Breckland District Local Plan (LP) has also expired. Some policies have been saved (CD62), but the former policy on renewable energy (ENV25) is not one of them. There are therefore no development plan policies on wind energy at the local level.

12. In 2005 Breckland District Council adopted a document entitled *Wind Energy Development - A Statement of Breckland Council Policy* (CD21). Paragraph 17.2.2 advises that turbines should be located so that any increase in ambient noise levels around noise sensitive properties is kept to a minimum. Paragraph 17.2.4 notes that the tranquillity in the very quiet areas of Breckland countryside is valued and should be preserved. The Statement was originally intended to be Supplementary Planning Guidance, to amplify LP policy ENV25.

Notwithstanding the fact that LP policy ENV25 has now expired, I consider that the Statement is a material consideration. I give it moderate weight, not least because its objectives are consistent with paragraph 22 of *Planning Policy Statement 22: Renewable Energy* (PPS22).

13. PPS22 and its *Companion Guide* were both published before the 2006 Inquiry, and both continue to have great relevance. A supplement to PPS1, *Planning Policy Statement: Planning and Climate Change*, was published a year after the 2006 Inquiry. Amongst other things, it encourages expeditious and sympathetic handling of planning applications which deliver sustainable development in response to climate change.

THE FIRST ISSUE - NOISE

14. *The Assessment & Rating of Noise from Wind Farms* (ETSU-R-97) is the basis on which I have made my assessment of noise. Despite the fact that the document is over 10 years old, I consider its methodologies to be sufficiently robust. They have been endorsed in the *Companion Guide* to PPS22, and by parliamentary clarification in 2007. They continue to be used by decision-makers.

15. ETSU-R-97 establishes that noise levels from wind farms should be limited to no more than 5dB(A) above the prevailing background noise level, with a minimum upper limit at night-time of 43dB(A); and a minimum upper limit in the daytime of between 35dB(A) and 40dB(A). The daytime upper limit depends on various factors, including the number of dwellings in the neighbourhood of the wind farm, the effect of noise limits on the number of kWh generated, and the duration and level of exposure to noise. Ecotricity, and the other main parties, have taken the lower daytime limit of 35dB(A) as being the most appropriate for this appeal. I take the same view, not least because of the quiet rural location of the appeal site.

16. Throughout my decision, in the interests of brevity, I have used the abbreviated term dB(A) where the full term dB(A) $L_{A90,10min}$ would be appropriate.

Background noise levels

17. The 2 turbines would stand in open countryside, near the edge of a field on Wood Farm. The 3 nearest dwellings are Wyrley Farm (432m away), Brick Kiln Farm (496m away) and its adjoining Stable Cottage (504m away). I will refer to these as the Noise Sensitive Properties (NSPs). According to RoDG, there are another 22 dwellings within 1,093m of the site, and I have no reason to dispute this.

18. Background noise has been measured by Ecotricity, the Council and RoDG in 3 different places and at 3 different times. In January 2004, Ecotricity measured it in a field just outside the curtilage of Brick Kiln Farm. There is a ditch a few metres away which, according to RoDG, often has running water that is clearly audible. There are also mature trees and a high hedge nearby. Ecotricity would have preferred to have taken its measurements within, not outside, the curtilage of Brick Kiln Farm, but this could not be arranged at the time. The windshield for the microphone used by Ecotricity during the measurement process has not been wind-tunnel tested, but it appears to have stood the test

of time for about 15 years. I do not therefore put great weight on RoDG's criticism of it.

19. Measurements were also taken by the Council's Environmental Health Officer during 2 days in January 2004. The measuring equipment was placed in the courtyard of Brick Kiln Farm, the principal area for rest and relaxation for its residents. The first day's data were contaminated because it rained and a plastic bag had to be put over the noise meter. It appears that the previous Inspector was unaware of this. The contaminated data, amongst other things, were used to support his view that the appellant's measurements gave a reasonable picture of general background noise.

20. In November and December 2005, Dr Hoare (a resident of Brick Kiln Farm and a witness for RoDG) measured background noise in the courtyard of Stable Cottage, about 20m from where the Council had taken its measurements. The courtyard's open side faces towards the site of the proposed turbines, 504m away. ETSU-R-97 favours "free field" locations for the measurement of background noise, but it also states that it may be appropriate to use sheltered locations that are most often used for rest and relaxation, provided that the measurements are not taken closer than 3.5m from any façade. The measuring location in the courtyard of Stable Cottage fulfilled these criteria.

21. Dr Hoare's results mirrored the uncontaminated results taken in 2004 by the Council in the adjoining courtyard. Dr Hoare and the Council both recorded background noise that was about 4.6dB(A) lower than that which Ecotricity had recorded in the field outside the curtilage of Brick Kiln Farm. This does not surprise me. The 2 courtyards are sheltered by their surrounding walls and by a wide windbreak of trees that wraps around much of the extensive curtilage of Brick Kiln Farm. Even with the light breeze that was blowing at the time of my site visit, the courtyards were havens of calm, whereas the breeze could be clearly heard and felt where Ecotricity had set up its measuring equipment. The rustling of leaves in the nearby hedge and trees was particularly noticeable.

22. Having visited Wyrley Farm, the third NSP, I am satisfied that the background noise measured by Dr Hoare and the Council at Stable Cottage and Brick Kiln Farm is sufficiently representative of the background noise in the part of the garden at Wyrley Farm that is used for rest and relaxation.

23. I have therefore reached the view that the background noise measured at Ecotricity's measurement site is unrepresentative of the background noise at the 3 NSPs. This is because Ecotricity's measuring site has the potential to be noisier than the areas used for rest and relaxation at the 3 NSPs, and its measurements of background noise could therefore be overstated.

24. Not only do I consider that the Ecotricity's measurements are unrepresentative, but I am also concerned about their accuracy. For example, the results show that background noise was greater when periods of rainfall were discounted. Logic suggests that the opposite would be true. Dr McKenzie, the witness for Ecotricity, could not explain the anomaly, except to say that the rainfall data did not come from the immediate vicinity of the NSPs. Nevertheless this, together with other minor anomalies, causes me to doubt the accuracy of the results.

25. Dr Hoare's measurements show that, at night time, background noise was generally between 20 and 30dB(A). It exceeded 40dB(A) only when wind speeds reach about 10m/s (Appendix 2, Document 9). Ecotricity's measurements show background noise dropping to below 20dB at night (FEI pages 21 and 22). Setting aside the accuracy of Ecotricity's measurements, all the results reinforce my view that this is a very quiet rural area, day and night. Indeed, according to RoDG, it is quieter than 23 other sites where wind farms have been proposed (Appendix 45, Document 10). I have no reason to doubt this.

Interim conclusion on background noise measurements

26. The unrepresentative location of Ecotricity's measuring site and the anomalies in the results have led me to conclude that the appellant's background noise measurements should be treated with caution. The indications are that they are overstated. This is an important matter, because it is on these measurements that Ecotricity has based its noise predictions.

27. I note that my conclusion on background noise measurements does not accord with that of the previous Inspector, but there are reasons for this. I have already stated that he used the Council's contaminated data as part of his noise assessment.

Wind shear

28. The previous Inspector did not have the wind shear data that are now available to me. It is important to take wind shear into account because, depending on atmospheric conditions, wind speeds at the height of a turbine's blades can be faster than wind speeds closer to the ground. Higher wind speeds make the blades turn faster and generate more noise than would be predicted solely from measurements taken closer to the ground. In certain circumstances, turbine noise that might be expected to be masked by background noise closer to the ground would not in fact be masked.

29. Ecotricity did not evaluate wind shear for the 2006 Inquiry. However, it has now been done, and the results are recorded in the Revised Environmental Noise Impact Assessment (Appendix E of the August 2008 FEI, CD57). Wind speeds at 20m, 40m and 50m above ground level were measured, and the data were retro-fitted (using averaging methodology) to the noise predictions made in 2004. Retro-fitting is not ideal. Furthermore, fluctuations in wind shear can be substantial, and averages can hide significant details.

30. A few weeks before the opening of the Inquiry, Ecotricity responded to a request to provide the detailed wind shear data from which the averages had been calculated. According to RoDG, the detailed data showed that non-neutral, or stable, atmospheric conditions prevailed for 82% of the time at the appeal site; as opposed to the neutral conditions that the ETSU-R-97 guidance assumes to prevail everywhere. RoDG's figure of 82% was not challenged by Ecotricity. The prevalence of non-neutral atmospheric conditions at Shipdham makes it more difficult to interpret background and predicted noise against the ETSU-R-97 guidance. This, in turn, could have repercussions on the accuracy of Ecotricity's noise predictions.

31. Because of the non-neutral conditions within each turbine's swept area (at least 3,800m^2) there would be a significant range of wind speeds. Ecotricity's detailed data show that changes of wind speed can occur from minute to minute. It is therefore important that adjustments to the speed or pitch of the blades can be made quickly enough to prevent exceedences of the ETSU-R-97 noise limits caused by wind shear. It is clear from paragraph 7.4 of the August 2008 FEI that the options for controlling the noise from the turbines include putting mitigation measures into place in the event that exceedences occur or, alternatively, incorporating a system known as SCADA (System Control and Data Acquisition) which would allow the operator to adjust the turbines' operational parameters. There is no detailed information as to how such measures would work on the Enercon E70 turbine, or on any other model. Much could depend on the model chosen by Ecotricity, and I cannot therefore take a firm view on the effectiveness of such measures.

Predictions of turbine noise

32. To predict the noise of the proposed turbines, Ecotricity has used the methodology in ISO 9613-2*: Acoustics - Attenuation of Sound During Propagation Outdoors* (Appendix 8, Document 9). I note the conflicting views about the accuracy of the methodology: RoDG points to ISO's estimate of +/- 3dB accuracy (Table 5, Appendix 8, Document 9); and Ecotricity points to research that shows that the methodology can overstate predictions by 2dB (paragraph 2.11, Dr McKenzie's rebuttal proof, Document 1). The conflicting claims about accuracy are largely inconclusive. However, for the purposes of this appeal, I am satisfied that the ISO methodology is sufficiently robust.

33. Ecotricity's noise predictions are based on two E70 turbines working at their warranted noise output level under downwind propagation conditions over hard ground. However, there would be nothing to prevent the installation of any other turbine model, provided that it complied with the height parameters specified in the description of development. According to RoDG, 3 alternative models have higher noise outputs than the E70, but fit within the height parameters. There is no evidence to dispute this.

34. Ecotricity's latest noise predictions, set out in its 2008 FEI (page 21, CD57), are significantly different to its earlier predictions in the 2004 Revised Environmental Statement (page 18, Appendix 11, CD44). It now predicts that the minimum upper daytime ETSU-R-97 noise limit of 35dB(A) or background noise plus 5dB(A), whichever is the greatest, would be exceeded at Wyrley Farm by a maximum of 2dB; whereas, in 2004, it predicted that the turbine noise would be below the limit by a minimum margin of 6dB. At night time, Ecotricity now predicts that the minimum upper ETSU-R-97 limit of 43dB(A) or background noise plus 5dB(A), whichever is the greatest, would be met by a minimum margin of only 3dB; whereas, in 2004, it predicted that the minimum margin would be 6.5dB.

35. At Brick Kiln Farm and Stable Cottage, the 2 other NSPs, Ecotricity now predicts that the daytime limit would only just be met. In 2004, it predicted that it would be below the limit by a minimum margin of 7.5dB. At night time, Ecotricity now predicts that the limit would be met by a minimum margin of only 3dB. In 2004, it predicted that the minimum margin would be 7.5dB.

36. In paragraph 7.3 of its FEI, Ecotricity states that, in the daytime, the ETSU-R-97 limit of 35dB(A) or background noise plus 5dB(A), whichever is the greatest, would be exceeded for 0.7% of the time at Wyrley Farm. Dr Hoare pointed out that there had been an error in Ecotricity's calculations, and the figure should be 7% not 0.7%. This error is conceded by Dr McKenzie in his rebuttal proof (paragraph 3.27, Document 1).

37. In addition to the 7% of the time when the daytime noise limit would be exceeded at Wyrley Farm, I am also concerned about the tightness of the margins for the times and places when Ecotricity predicts that the ETSU-R-97 daytime and night time limits would be met. These margins are either non-existent during the daytime at Brick Kiln Farm and Stable Cottage; or as little as 3dB during the night at all three NSPs. In my view the margins are uncomfortably tight, not least because they are based on background noise measurements which I have already decided should be treated with caution because the indications are that they are overstated.

38. Dr Hoare's conclusions (set out in Appendix 16, Document 9) show that, for all 3 NSPs, the turbines would be at least 10dB above the background noise for between 14% and 16% of the time (depending upon the wind direction); and at least 5dB over the background noise for between 31% and 34% of the time. Using BS 4142:1997 *Method for rating industrial noise affecting mixed residential and industrial areas,* which advises that noise complaints are likely at 10dB, Dr Hoare has calculated that for 27% of the time someone somewhere would be complaining about the noise. The appellant did not provide any alternative evidence on this matter. However, I am mindful of the fact that paragraph 44 of Section 8 in the Technical Annex to the *Companion Guide* to PPS22 favours the ETSU-R-97 methodology, in preference to BS 4142:1997, when assessing and rating noise from wind energy developments.

Amplitude Modulation (AM) or "blade swish"

39. The 2007 Salford report *Research into Aerodynamic Modulation of Wind Turbine Noise* found that AM was not generally a factor in noise complaints. I also note that the government has decided that there is currently no compelling case for further research about it. Ecotricity has made no allowance for the possible presence of AM, relying on the fact that the ETSU-R-97 recommendations take it into account, without requiring any further correction to be applied.

40. RoDG brought to my attention recent research, including a report to the government produced by the Hayes McKenzie Partnership (Appendix 35, Document 10), which links AM to stable atmospheric conditions and high wind shear; features that have been found to exist at the appeal site. Nevertheless, on the basis of the available research, I find the evidence about AM to be inconclusive.

Low Frequency noise

41. Low Frequency (LF) noise is difficult to measure, not least because established noise descriptors are based on "A" weighted sound levels which effectively filter out LF sounds. Ecotricity predicts that the proposed turbines would not be a significant source of LF noise because of the relatively small distances at which it would be sensed. From the information available to me I am unable to agree

or disagree with this prediction. But, in any event, I am guided by paragraph 45 of Section 8 in the Technical Annex to the *Companion Guide* to PPS22 which indicates that there is no evidence that ground-transmitted LF noise from wind turbines is at a sufficient level to be harmful to human health.

Interim conclusion on the predicted noise levels

42. Firstly, there is no certainty that Enercon E70 turbines would be erected; noisier models could be used.

43. Secondly, Ecotricity's predicted margins for meeting the ETSU-R-97 noise limits are tight. This is critical, not least because the margins are based on the measurements of background noise which I have already decided should be treated with caution. The indications are that they are overstated. In any event, Ecotricity accepts that the ETSU-R-97 noise limits would be exceeded for 7% of the daytime at Wyrley Farm.

44. For these reasons, I have concluded that there is a strong likelihood that noise from the 2 turbines would materially worsen the living conditions at Wyrley Farm, Brick Kiln Farm and Stable Cottage unless the wind farm operations could be effectively restrained by planning conditions.

Could planning conditions control noise effectively?

45. I have already indicated that there are uncertainties surrounding the methods by which the turbine operations would be controlled to reduce noise. Much would depend upon the type of turbine chosen. In any event, Ecotricity has consistently accepted that conditions are necessary in order to regulate noise and, a few days before the Inquiry, it suggested four noise conditions (Document 42).

46. The first condition, and its 2 accompanying tables, sets out the maximum noise to be received at the NSPs. When an exceedence gives rise to a noise complaint, the second condition requires the operator, at the Council's request, to employ an independent consultant to measure the noise received at the NSPs, and to make the measurements available to the Council. There are 3 accompanying pages of guidance notes to explain how the measurements should be taken. The third condition requires the operator to log the wind speed and direction at the turbines' hubs, and to make the data available to the Council for any periods relevant to a noise complaint. The fourth and final condition requires the operator to provide the Council with a list of 10-minute periods when the turbines were not operating normally during noise monitoring.

47. During the discussion on conditions at the Inquiry, Ecotricity made a last-minute suggestion that a further condition could be imposed requiring background noise to be checked at the NSPs prior to the commencement of the development. The suggestion was made because Ecotricity wanted to remove any doubts about the existing background noise at the NSPs.

48. Whilst there is nothing intrinsically wrong with long and technically complex planning conditions, it is essential that they do the job that they are intended to do without undue difficulty or delay. The conditions have to work in the real world. The proximity of the nearest dwellings, the very quiet background noise

levels, my lack of confidence in the sensitivity of the turbines' control systems, and Ecotricity's own admission that noise limits would be breached for 7% of the daytime at Wyrley Farm, are all factors leading me to the view that the first condition would be triggered with some frequency, thereby bringing the remaining conditions into play with equal frequency.

49. Circular 11/95 sets out the 6 tests for planning conditions. One of these is precision. Despite the wealth of detail in the conditions, and their accompanying guidance notes and tables, I have noted many instances where there is a lack of precision. For example, phrases such as "*in the vicinity of*", "*appropriate* adjustment", "*significantly* different" and "a *sufficient* period" are not helpful. To my mind, the difficulties in interpreting the conditions would cause tensions between the operator and the Council, and this could lead to undue delays. I anticipate that the tensions would be further heightened by disagreements about the accuracy of the 2 tables supporting the first condition, and the mathematical soundness of the formula in paragraph 4 of the guidance notes.

50. Enforceability is another of the Circular 11/95 tests. In order to verify that a condition is being breached, its wording must be precise. I have already identified my concerns about the conditions' lack of precision. Moreover, I consider that the procedures for enforcing the conditions would require great patience from the complainants, and a significant degree of time-consuming mathematical and statistical analysis by all involved.

51. According to the guidance notes, at least fifty 10-minute noise measurements would have to be taken at different times of the day and night during dry weather with the right wind conditions and when the turbines were operating normally. Arrangements would then have to be made to turn the turbines off for a similar number of periods, and under similar weather conditions, in order to check background noise. The Council admitted that this could take about 6 weeks to do. In the meantime, the complainant would have to live with the noise problem.

52. Even if the Council decided to take a short cut, for example by applying for an Injunction as soon as a noise complaint had been received, the same detailed and time-consuming measurements would have to be taken to support the application for the Injunction. If the Court was minded to grant an Injunction, it would be equally difficult to devise a precise and enforceable wording for it.

53. Ecotricity accepts that noise levels would be exceeded for 7% of the daytime at Wyrley Farm; and RoDG predicts that someone somewhere would be complaining about the noise for 27% of the time. It is therefore reasonable to suppose that the conditions would be triggered with some frequency. In my view, their shortcomings make them unsuitable for frequent use. I note that recent planning permissions for wind farms elsewhere have included conditions of equal complexity and length to those being suggested here. However, in such cases it appears that noise limits were either not expected to be exceeded, or were not expected to be exceeded on such a frequent basis as in the appeal before me.

54. For these reasons, I consider that the suggested conditions could not control noise effectively. They fail the Circular 11/95 tests of precision and enforceability, and they are too cumbersome for frequent use.

55. I accept that it is within my remit to improve the wording of the conditions. The improvements would have to be extensive. In my view, even if I were to make some improvements, the conditions would still be too complex and unwieldy for frequent use. Furthermore I am not convinced that future problems in relation to precision and enforceability could be avoided.

Other effects on living conditions

Shadow flicker

56. Shadow flicker can be experienced inside buildings when the sun passes behind the blades of a turbine. The problem is acknowledged by Ecotricity, and a condition has been offered which would ensure that the turbines were turned off at critical times. According to the evidence of Dr Hoare, this would be up to 3% of the year; a figure that was not disputed. Apart from the inevitable reduction in the "green" benefits of the turbines, I do not see shadow flicker as an overriding problem.

Disruption during the construction of the turbines

57. There would undoubtedly be disruption to the residents of the village of Shipdham, and to those driving through it, during the 16-week construction period. I accept that large noisy vehicles passing close to Shipdham Manor Residential Care Home could cause anxiety and distress to the frail and elderly residents whose rooms overlook Church Lane. However, a planning condition to control the hours when traffic could enter or leave the site, and effective coordination between the developers and the Shipdham Manor staff could, in my view, minimise any adverse effects to an acceptable degree.

Overall conclusion on the living conditions issue

58. The noise of the proposed turbines would have a materially adverse effect on the living conditions at Wyrley Farm, and is likely to have the same effect at Brick Kiln Farm and Stable Cottage.

59. In that regard, I am mindful of the fact that the appeal site is in a part of Norfolk where tranquillity is an important feature. Paragraph 17.2.4 of *Wind Energy Development - A Statement of Breckland Council Policy* (CD21) makes it clear that such tranquillity should be preserved.

THE SECOND ISSUE – VISUAL IMPACT

60. The site lies within a landscape defined as Plateau Farmland and Settled Tributary Farmland (CD22). Plateau Farmland is considered to have a high capacity to accommodate a small-scale group of wind turbines, and Settled Tributary Farmland has a moderate capacity. I share that view.

61. My site visit, albeit in poor visibility but supported by Ecotricity's photomontages, has led me to the view that from most viewpoints the proposed turbines would be distant but eye-catching features in an open agricultural landscape. They would not be the only vertical structures in the

landscape; there is a prominent line of pylons running east/west about 1.5km to the north of the appeal site.

62. To my mind, the turbines have an elegant design which would not be unsightly. I accept that this is a matter of subjective opinion and there are others who take an opposite view. These include Dr Caro, a resident of Daffy Green, who can see the North Pickenham wind farm from his garden, and who would also be able to see the proposed turbines on the appeal site (Document 26).

63. The 8 turbines at North Pickenham, and the 2 turbines at Swaffham, are between about 13km and 10km away to the west. However, the intervening distance and topography leads me to the view that the cumulative landscape impact of the proposed 2 turbines would not be materially harmful. This is borne out by Ecotricity's Zone of Visual Influence maps (Appendix XVIII, CD44). There are other wind farm schemes in the pipeline which might come forward, such as those at Wymondham (22km away) and Hempnall (32km away) but, in my view, they would be too far away to have a material impact.

64. Views of the proposed turbines from the village of Shipdham would be largely screened by buildings and vegetation. I therefore agree with the previous Inspectors that the settings of the Shipdham Conservation Area and the Grade I listed All Saints Church and Grade II listed Shipdham Manor would be preserved. This would satisfy the tests of Sections 72 and 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990.

65. I have therefore concluded on the second issue that the proposed turbines would not have a harmful impact on the character and appearance of the surrounding area. I note that the 2 previous Inspectors came to the same conclusion.

OTHER MATTERS

Transportation of the turbines' components to the site

66. Transporting the largest components would be a challenge. The churchyard's flint wall alongside Church Lane, the surface of Church Lane itself, the trees and other vegetation that overhang the route, and the flank wall of Shipdham Manor would all be particularly vulnerable to damage. However, the computerised video evidence of Ecotricity's specialist contractor, Mr Collett, indicated to me that the job could be achieved without trespass or damage provided that specialist equipment and extreme care were used.

Separation distances

67. So far as I am aware, it is unprecedented in flat and quiet rural locations to have such large turbines within 700m of 9 dwellings, 2 of which would be only about 500m away and one of which would be only 432m away. ETSU-R-97 does not set a minimum separation distance. However, I note that other wind farm developers such as Powergen Renewables and Enertrag look for separation distances of at least 700m; and Scottish Power's Windfarm Site Selection Policy requires an even greater separation of at least 1000m. In this context, I find it hard to understand why the sites for the proposed turbines, particularly the eastern one, were chosen by Ecotricity in preference to other more distant sites on the same farm; sites which, on the face of it, could have

overcome many of the objections about noise. I also find it surprising that the sites were chosen without a prior noise study, and that the same sites have been doggedly pursued for 8 years.

68. In my view, the separation distances have not been chosen to minimise increases in ambient noise levels; a requirement of paragraph 22 of PPS22.

The effect on wildlife and farm animals

69. There are conflicting opinions about the effect of the turbines on wildlife, particularly bats and birds. I am inclined to accept the conclusions of Ecotricity's October 2008 FEI (Appendix 5, CD58), not least because they are supported by those of Natural England and the RSPB, that the proposed turbines would not cause unacceptable harm to wildlife. Planning conditions that required the monitoring of bird strikes and bat casualties have been suggested by the Council and CATSS. To my mind, if the proposal were to go ahead, these would enable the Council to keep a watching brief on the situation, and to control matters if necessary.

70. A neighbouring farmer is concerned that shadows cast by the turning blades could agitate young bulls whilst they were being loaded into lorries. In my view, this is something that could be minimised by careful timing and management.

The broader picture and the benefits of the scheme

71. Climate change has become accepted as one of the most serious threats facing the world's environment. Since the 2006 Inquiry, action to combat the threat has continued to gather pace. Policies and documents supportive of the drive to reduce emissions have flowed from the UK government and Europe. These include the 2007 Fourth Report of the Intergovernmental Panel on Climate Change (CD69), the 2007 White Paper on Meeting the Energy Challenge (CD68), the 2007 PPS1 Supplement on Planning and Climate Change (CD59) and the 2008 draft UK Renewable Energy Strategy (CD65).

72. Estimates of the number of households that could be provided with electricity from the 2 proposed turbines vary considerably. Much would depend on the amount of time when the turbines had to be slowed or stopped in order to comply with the noise limits, or to prevent shadow flicker. However, I am in no doubt that if the turbines were to be built, less power would be needed from traditional sources, thereby reducing the amount of carbon dioxide and sulphur dioxide emitted into the atmosphere. It is also undeniable that the proposed turbines would assist in meeting the renewable energy targets of RSS policy ENG2, a policy that is part of the development plan.

OVERALL CONCLUSIONS

73. A balancing exercise has to be undertaken. In favour of the scheme are:

- its "green" benefits, which are in line with the government's renewable energy objectives
- its contribution towards the targets in RSS policy ENG2

- my conclusion that there would be no harmful impact on the surrounding landscape, or on the setting of the Shipdham Conservation Area and the 2 nearest listed buildings.

74. Weighing against these favourable points is the materially adverse effect on the living conditions at Wyrley Farm, and the likelihood of the same effect at Brick Kiln Farm and Stable Cottage.

75. I have decided that the points in favour of the scheme, listed above, are not sufficient to outweigh my concerns about living conditions. There is not one single factor that makes the proposal unacceptable. It is the accumulation of several factors that has led me to the decision that, on balance, the appeal should be dismissed. They include:

- the turbines' close proximity to dwellings
- the stable atmospheric conditions which would lead to high wind shear factors, thereby making it difficult to interpret background and predicted noise against the ETSU-R-97 guidance
- the frequent changes in wind shear, and the uncertainties about the measures that would be put in place to react to such changes
- the tranquillity of this very quiet area of countryside; something that *Wind Energy Development - A Statement of Breckland Council Policy* (CD21) and PPS22 seek to protect
- the shortcomings of Ecotricity's measurements of background noise on which its noise predictions have been made.
- Ecotricity's acknowledgement that the ETSU-R-97 noise limit of 35dB(A) or background noise plus 5dB(A), whichever is the greatest, would be exceeded for 7% of the daytime at Wyrley Farm
- the tightness of the margins by which noise limits would be met at other times
- RoDG's prediction that the noise of the turbines would be at least 5dB over the background noise for between 31% and 34% of the time, and at least 10dB(A) above background noise for between 14% and 16% of the time
- Ecotricity's reliance on conditions to make its scheme acceptable, coupled with the shortcomings of those conditions and the frequency with which they would be triggered.

76. I accept that my decision to dismiss the appeal is contrary to that of the previous Planning Inspector in 2006. Consistency and predictability in decision-making are important. However, my conclusions about noise have been reached in the light of new evidence; evidence that was not available at the previous Inquiry.

77. In reaching my decision I have taken into account all other matters raised, including the many other appeal decisions that have been brought to my

attention (CDs 36 and 80). However, each appeal has to be considered on its own merits, as I have done in this particular case.

78. There are no other matters sufficient to outweigh the considerations that have led me to my conclusion that the appeal should be dismissed.

Ruth V MacKenzie

INSPECTOR

APPEARANCES

For the Local Planning Authority:

Mr Michael Horn	Head of Legal Services Breckland District Council
Mr Andrew Grimley	Environmental Health Officer Breckland District Council

For the appellant, Ecotricity:

Mr Marcus Trinick	Partner in Eversheds LLP Solicitors 1 Callaghan Square Cardiff CF10 5BT

He called:

Mr David Stewart MA(Cantab) DipTP MRTPI	David Stewart Associates Selgars House Uffculme Cullompton EX15 3DA
Dr Andy McKenzie PhD BSc MIOA	Hayes McKenzie Partnership Ltd West Dean Salisbury SP5 1JL
Mr David Collett	R Collett & Sons (Transport) Ltd Victoria Terminal Albert Road, Halifax HX2 0DF
Dr Simon Pickering BSc(Hons) PhD	Axiom House Station Road Stroud GL5 3AP

For the Residents of Daffy Green - RoDG (Rule 6 party):

Mr David Forsdick, of Counsel	Instructed by Richard Buxton, Environmental & Public Law 19B Victoria Street Cambridge CB1 1JP

He called:

Dr Lee Hoare	A resident of Daffy Green, giving evidence about noise
Mr Mike Stigwood MIA	MAS Environmental 14 South Road Impington CB24 9BP
Mrs Jane Davis	A resident of North Drove Bank, Spalding, giving evidence about AM

For the Campaign against Turbines at Shipdham and Scarning - CATSS (Rule 6 party):

Mr John Campbell QC	Instructed by Mr Brian Kidd of CATSS The Ringers The Green Shipdham IP25 7PG
He called:	
Mr Brian Kidd	Overview
Mr Geoff Sinclair (Environment Information Services)	Planning policy and landscape assessment
Cllor Paul Hewett (Ward Member for Shipdham)	Impact on community and proximity to residential properties
Cllor Teresa Hewett (Ward Member for Bradenham)	Impact on community and proximity to residential properties
Mr David Hill (Chairman of Shipdham PC)	Impact on parish community
Dr Ian Shepherd (CPRE Norfolk)	Wind farm proliferation, impact on tranquillity
Mr Norman Simmons	Access to the site for construction purposes
Mr Stephen Kite	Impact on residents of Church Lane
Mr Keith Wood	Impact on bats

Third parties:

Mr Geoff Hinchliffe	Representing Challenge Against Nimbyism in Shipdham (CANIS)
Mr Alan Shaw BSc CEng MIET	Retired Chartered Electrical Engineer
Dr A J Caro	Resident of Daffy Green

PROOFS AND WRITTEN STATEMENTS

For Ecotricity

Document 1	Dr McKenzie's main proof and appendices, and his rebuttal proof and appendices
Document 2	Mr Stewart's proof and appendices
Document 3	Mr Collett's proof, rebuttal proof, and appendices
Document 4	Mr Pickering's proof
Document 5	Mr Spaven's proof and appendices (not given verbally)

For RoDG

Document 6	Dr Hoare's proof
Document 7	Mr Stigwood's proof and appendices
Document 8	Mrs Davis's proof
Document 9	RoDG's appendices Volume 1
Document 10	RoDG's appendices Volume 2

For CATSS

Document 11	Mr Sinclair's proof and appendices
Document 12	Mr Kidd's proof
Document 13	Cllor Paul Hewett's proof
Document 14	Cllor Teresa Hewett's proof
Document 15	Mr Hill's proof
Document 16	Dr Shepherd's proof
Document 17	Mr Simmons' proof
Document 18	Mr Aldridge's proof on the conservation area and listed buildings (not given verbally)
Document 19	Lt Col Sharples' proof on the impact on Shipdham Residential Home (not given verbally)
Document 20	Mr Kite's proof
Document 21	Dr Martin's proof on the impact on community health (not given verbally)
Document 22	Mr Scott's proof on the proximity to the turbines (not given verbally)
Document 23	Mr Wood's proof
Document 24	Appendices 1-33 for CATSS

For other third parties

Document 25	Mr Hinchliffe's statement on behalf of CANIS
Document 26	Dr Caro's statement
Document 27	Mr Shaw's statement and appendices

DOCUMENTS SUBMITTED AT (OR JUST BEFORE) THE INQUIRY

Document 28	Mr Trinick's opening statement for Ecotricity
Document 29	Mr Forsdick's opening statement for RoDG
Document 30	Plan showing sight lines between proposed turbines and Brick Kiln Farm, submitted by Mr Forsdick
Document 31	Procedure for the assessment of low frequency noise complaints, University of Salford for DEFRA, 2005, submitted by Mr Forsdick
Document 32	Technical Details of Noise Survey at Stable Cottage (from appendices to Dr Hoare's proof for 2006 Inquiry), submitted by Mr Forsdick
Document 33	Letter from South Holland District Council to Mrs Davis of Grays Farm, Deeping St Nicholas, submitted by Mr Trinick
Document 34	Noise monitoring graphs from Grays Farm, submitted by Mr Forsdick
Document 35	Letter from Bond Pearce to Mr Kidd of CATSS relating to grid

	connection and underground cabling, 4 December 2008, submitted by Mr Trinick
Document 36	Letter from Mr Stebbing to the Planning Inspectorate dated 30 November 2008, submitted by Mr Trinick
Document 37	Extract from PPS22's Technical Annex about grid connection, submitted by Mr Campbell
Document 38	Extract from Ecotricity's 2004 Revised Environmental Statement relating to grid connection, with attached plan of cable route options, submitted by Mr Campbell
Document 39	Extract from Ecotricity's October 2008 Further Environmental Information relating to cable routes, submitted by Mr Campbell
Document 40	List of suggested conditions submitted by the Council
Document 41	List of suggested conditions submitted by CATSS
Document 42	List of suggested conditions submitted by Ecotricity
Document 43	Closing submissions for Ecotricity
Document 44	Closing submissions for RoDG
Document 45	Closing submissions for CATSS

CORE DOCUMENTS

CD1	*PPS1: Delivering Sustainable Development*
CD2	*PPS7: Sustainable Development in Rural Areas*
CD3	*PPS9: Biodiversity and Geological Conservation*
CD4	*PPG15:Planning and the Historic Environment*
CD5	*PPG16: Archaeology and Planning*
CD6	*PPS22: Renewable Energy*
CD7	*Planning for Renewable Energy - A Companion Guide to PPS22*
CD8	*PPG24: Planning and Noise*
CD9	*Regional Planning Guidance for East Anglia to 2016*
CD10	*East of England Plan* – Draft revision to the RSS for the East of England
CD11	*Advisory Note on Planning and Sustainable Energy in the East of England*, April 2004
CD12	*Making Renewable Energy a Reality - Setting a Challenging Target for the Eastern Region,* a Report to the East of England Sustainable Development Round Table
CD13	*Safeguarding Aerodromes*, ODPM Circular 1/2003
CD14	*Wind Energy and Aviation Interests Interim Guidelines* , 2002
CD15	*Air Traffic Services Safety Requirements*, CAP 670
CD16	*Safeguarding of Aerodromes,* CAP 738
CD17	EIA Regulations 1999
CD18	*Environmental Impact Assessment,* Circular 02/99
CD19	*Norfolk Structure Plan 1999*
CD20	*Breckland District Local Plan*, adopted 1999
CD21	*Wind Energy Development- A Statement of Breckland Council Policy*, 2005
CD22	*Wind Turbine Development Landscape Assessment*, Evaluation and Guidance for Breckland Council and King's Lynn and West Norfolk Borough Council 2003
CD23	*DETR Climate Change – The UK Programme*, 2000
CD24	Report of the Royal Commission on Environmental Pollution, 2000

CD25	*Electricity from Renewables,* Report of the House of Lords Select Committee on the European Communities 1999
CD26	*The Energy Review,* Cabinet Office Performance and Innovation Unit 2002
CD27	*Our Energy Future- Creating a Low Carbon Economy*, White Paper 2003
CD28	House of Commons Environmental Audit – Tenth Report, 2004
CD29	*Renewable Energy: Practicalities*, House of Lords Science and Technology Committee 2004
CD29(a)	*Renewable Energy in Scotland,* Scottish Parliament Enterprise and Culture Committee report 2004
CD30	*DTI Renewable Energy*, National Audit Office report, 2005
CD31	*Wind Power in the UK*, Sustainable Development Commission 2005
CD32	*Energy for the Future: Renewable Sources of Energy*, European Commission 1997
CD33	EU Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market
CD34	*The Share of Renewable Energy in the EU*, European Commission 2004
CD35	*Climate change and natural forces – the consequences for landscape character*, Scottish Natural Heritage and the Countryside Agency,
CD36	Appeal decisions relating to Walland Marsh, Darracott, Deeping St Nicholas, Shipdham, Roscrow, and Knabbs Ridge
CD37	*Guidelines for Landscape and Visual Impact Assessment Second Edition*, Landscape Institute and the Institute of Environmental Management and Assessment 2002
CD38	*Landscape Character Assessment*, guidance for Scottish Natural Heritage and the Countryside Agency 2002
CD39	*Cumulative Effect of Windfarms*, Scottish Natural Heritage 2005
CD40	*Visual Assessment of Windfarms: Best Practice,* Scottish Natural Heritage 2002
CD41	Blank
CD42	ETSU-R-97 (not supplied)
CD43	*BS 4142:1997 – Method for rating industrial noise affecting mixed residential and industrial areas*
CD44	2004 Revised Environmental Statement for Shipdham Wind Park, Parts I, II and III and Appendices I to XXVIII
CD45	Planning application and decision notice (on the file)
CD46	Countryside Agency: Countryside Character Areas Vol 6 East of England (in Appendix XVII of CD44)
CD47	CAP 428 Safety Standards at Unlicensed Aerodromes
CD48	Planning Officer's Report to Committee (on the file)
CD49	First application submitted in December 2001
CD50	Noise Impact Assessment
CD51	First appeal decision (in Appendix VI of CD44)
CD52	Shipdham Airfield - Schematic Diagram
CD53	The Standard Overhead Join: Take-off and landing procedure
CD54	Petition collected by Geoff Hinchliffe for Challenge Against Nimbyism in Shipdham (CANIS)
CD55	Extracts from Environmental Statement for windfarm at North Pickenham
CD56	Statements of case and letters from interested parties, 2008
CD57	Further Environmental Information, August 2008

CD58	Further Environmental Information, October and November 2008
CD59	*Planning and Climate Change*, Supplement to PPS1
CD60	*Planning for a Sustainable Future*, White Paper 2007
CD61	Direction regarding saved policies of the Norfolk Structure Plan, 2007
CD62	Direction regarding saved policies of the Breckland District Local Plan
CD63	*The Revision to the RSS for the East of England*, 2008
CD64	*Placing Renewables in the East of England*, report to the East of England Regional Assembly 2008
CD65	*Executive Summary to BERR's UK Renewable Energy Strategy*: Consultation Document, 2008
CD66	Prime Minister's speech on creating a low carbon economy, June 2008
CD67	Press Notice of statement by Energy and Climate Change Secretary regarding cutting greenhouse gas emissions by 80% by 2050
CD68	*Meeting the Energy Challenge*, White Paper 2007
CD69	*Climate Change 2007*, IPCC's Synthesis Report
CD70	*The Economics of Climate Change* (executive summary), Stern Review
CD71	*The Energy Challenge*, DTI 2006
CD72	*Renewables Statement of Need*, Annex D of The Energy Challenge 2006
CD73	*Energy Measures Report,* BERR 2007
CD74	Blank
CD75	EU press release January 2008
CD76	*An assessment of the evidence on the costs and impacts of intermittent generation on the British electricity network*, UKERC, 2006
CD77	*Wind Power and the UK Wind Resource*, Environmental Change Institute of Oxford University, 2005
CD78	*Climate Change* – the UK Programme 2006
CD79	*Draft Climate Change Policy,* Natural England 2007
CD80	22 appeal decisions relating to wind farms
CD81	Dr McKenzie's evidence from the 2006 Inquiry
CD82	Proposal for a Directive of the European Parliament and Council on the promotion of the use of energy from renewable sources, 2008
CD83	*The Economics of Renewable Energy*, House of Lords Select Committee report November 2008
CD84	*Cumulative Effect of Windfarms*, Version 2 April 2005 Scottish Natural Heritage
CD85	*A guide to good practice and procedures* (consultation paper) DCLG's Environmental Impact Assessment 2006
CD86	*Spatial Frameworks and Supplementary Planning Guidance for Windfarms,* The Scottish Government's Planning Advice Note 45 Annex 2
CD87	Met Office rainfall records, January 2004