



Appeal Decision

Inquiry opened on 3 November 2009
Site visits made on 17 & 19 November
2009

by **R P E Mellor** BSc DipTRP DipDesBEnv
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an Inspector appointed by the Secretary of State
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Decision date:
25 January 2010

Appeal Ref: APP/X1545/A/06/2023805

Hockley Farm, Hockley Lane, Bradwell-on-Sea, Essex CM0 7PZ

- 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 NPower Renewables Ltd (NRL) against the decision of Maldon District Council (MDC).
- The application Ref FUL/MAL/06/00291, dated 27 February 2006, was refused by notice dated 7 July 2006.
- The development proposed is the construction of a wind farm comprising 10 turbines with a maximum height of 121m to blade tip, substation building, anemometer mast and ancillary infrastructure.
- This decision supersedes that issued on 10 September 2007. That decision on the appeal was quashed by order of the High Court.

Decision

1. I allow the appeal, and grant planning permission for the construction of a wind farm comprising 10 turbines with a maximum height of 121m to blade tip, substation building, anemometer mast and ancillary infrastructure at Hockley Farm, Hockley Lane, Bradwell-on-Sea, Essex CM0 7PZ in accordance with the terms of the application, Ref FUL/MAL/06/00291, dated 27 February 2006, and the plans submitted with it subject to the conditions set out on the attached schedule.

Procedural Matters

2. The Inquiry sat between 3 November and 20 November. I made accompanied site visits to the control tower of London Southend Airport on 17 November and to the appeal site and the surrounding area on the morning of 19 November. I also made unaccompanied site visits to the surrounding area on the afternoon of that day and on other days.
 3. The appeal was accompanied by: an Environmental Statement (ES) produced in accord with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, as amended; and comments from statutory consultation bodies and representations duly made about the ES and the likely environmental effects of the proposed development. Further information was requested by the Planning Inspectorate under regulation 19 and was submitted in February 2007. Further wind data was subsequently supplied by the Appellant in response to a request from the Rule 6 party that was endorsed by the Inspectorate. In coming to my decision I have taken into account that and all other environmental information
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submitted in connection with the appeal including that arising from written and oral evidence and questioning at the Inquiry.

4. The ES describes the rated capacity of each turbine as between 1.5MW and 2.5MW. This would depend on the final selection of equipment. The approximate rotor diameter would be 82m. Highways access has been assessed on individual turbine blade lengths of between 33.3m and 42.0m. The application description limits the height of the turbines to 121m. The submitted drawing REN/BRA/0040/A shows a 'typical' turbine. It is thus only illustrative and, within the height limit, a different detailed design may be employed, the approval of which can be reserved by planning conditions, as can the precise micro-siting of each turbine within the application site.

Main issues

5. I consider the main issues to be the effects of the proposed development on:
 - a) the landscape and seascape;
 - b) the setting of ancient monuments, listed buildings and conservation areas;
 - c) the living conditions of residents in respect of noise and outlook;
 - d) aviation interests with particular reference to the radar at London Southend Airport;
 - e) ecology with particular reference to birds and bats;
 - f) traffic and transport; and
 - g) whether any identified harm in these respects is outweighed by benefits of the wind farm development.

Background

6. Following the first public inquiry in 2007, planning permission was granted by Inspector Major. That decision was subsequently challenged on several grounds. The Secretary of State accepted some but not all of the grounds of challenge. With the consent of the parties, the decision was quashed by the High Court in 2008 because drafting errors in two planning conditions relating to the control of noise may have led to the conditions being unenforceable. The other grounds of challenge were not considered by the Court. The appeal has been redetermined by a different Inspector and on the basis of new evidence in relation to all issues.

Planning Policy and Changes since the 2007 Inquiry

7. Three key principles of the Government's Planning Policy Statement 22 'Renewable Energy' (PPS22) remain of particular relevance. Key principle (i) is that: 'Renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and environmental, economic, and social impacts can be addressed satisfactorily'. Key principle (viii) provides that: 'Development proposals should demonstrate any environmental, economic and social benefits as well as how any environmental and social impacts have been minimised through careful consideration of location, scale, design and other measures'.

Importantly key principle (iv) also provides that: 'The wider environmental and economic benefits of all proposals for renewable energy projects ... are material considerations that should be given significant weight in determining whether proposals should be granted planning permission.'

8. There have been significant changes in other local, regional and national planning policy since the 2007 Inquiry. In particular, whilst Policy PU6 of the Maldon District Replacement Local Plan (2005) (the LP) remains in place, some other development plan policies have expired, notably Policy EG2 of the Essex and Southend-on-Sea Replacement Structure Plan (2001) (the SP). Also the East of England Plan (2008) (the EEP) has now been adopted as the Regional Spatial Strategy. Whilst some of its policies have been challenged in the courts, they are not relevant to this development. I thus consider that this does not prevent my giving those policies which are relevant full weight as part of the development plan. In particular Policy ENG2 sets specific targets for installed renewable energy capacity for 2010 and 2020. These targets cover all forms of onshore renewable energy explicitly exclude offshore wind. It is not disputed that the 2010 target will be missed. Sub-regional targets have yet to be developed.
9. Whilst not itself adopted policy or directed at development control decisions, the ARUP Report 'Placing Renewables in the East of England' commissioned by the Regional Assembly is a material consideration insofar as it will inform other measures to meet the renewable energy targets for the region up to 2020. It indicates an overall need for about 500 wind turbines in the region if that target is to be achieved. The Report describes the Greater Thames Estuary (including the Dengie Peninsula) as having 'Medium Landscape Sensitivity' with a potential maximum wind farm typology of 4-12 turbines. Whilst the mapped constraints do not include all potentially relevant matters such as aviation and cultural heritage, they do indicate that parts of the peninsula are notably free of other strategic constraints such as: low wind speeds; national landscape or conservation designations; or the presence of residential dwellings within 500m. However the Report contains caveats and further local assessments are advised.
10. At national level 'Planning Policy Statement; Planning and Climate Change' (PPSPPC) was published by the Government in December 2007 as a Supplement to Planning Policy Statement 1. It expands on previous policy in PPS22 and it explicitly takes precedence over other Planning Policy Statements where there is any difference in emphasis on climate change. It may also supersede relevant development plan policies that have yet to be updated. The Department of Energy and Climate Change has also published the UK Renewable Energy Strategy (2009) which provides for interim renewable energy targets between 2010 and 2020. The Government has recently issued draft National Policy Statements on Energy, Nuclear Power and Renewable Energy. Amongst other things these now make it more likely that a new Nuclear Power Station (NPS) will be developed near the closed Bradwell NPS.
11. Since the 2007 Inquiry, several guidance documents of relevance to wind turbine development have also been published by bodies including Natural England, English Heritage, and the Civil Aviation Authority.

12. The main physical change to the vicinity of the appeal site since 2007 has been the installation of a large offshore wind farm at Gunfleet Sands to the east. Elsewhere, London Southend Airport has changed hands and the new owners are taking forward expansion plans with the construction of a railway station underway and the recent submission of a planning application to extend the runway. EEP Policy E7 and other development plan policies for that area include in-principle support for the development of the airport to meet local demand and to contribute to local economic development.

Reasons

a) Landscape (including Seascape)

13. The 10 turbines have been significantly reduced in number when compared to pre-application proposals which were for as many as 34 turbines over a much larger site.

Landscape Impact

14. PPSPPC at paragraph 20 enjoins local planning authorities to ensure that any local approach to protecting landscape does not preclude the supply of any type of renewable energy other than in the most exceptional circumstances.
15. The LP at paragraph 10.31 makes particular reference to Maldon, as a coastal district, having a greater potential to exploit wind than any other source of renewable energy. The Environmental Statement and the Arup Study both confirm that the appeal site is located within an area of adequate wind resource. The appeal site is in the countryside where LP Policy CC6 will only permit development that (in summary) will not harm landscape character, is of appropriate design for the landscape, and is itself landscaped to protect and enhance landscape distinctiveness. Saved SP Policy CC1 also seeks the particular protection of undeveloped coastal areas with any development not to adversely affect its open and rural character, historic features or wildlife. In this 'Coastal Zone' LP Policy CC11 adds further criteria that (in summary) development will only be permitted that: requires a coastal location; has minimal impact on views; meets an essential overriding local need which cannot be met within settlement development boundaries; and that every reasonable effort is made to use previously-developed land. These LP and SP policies set exacting requirements which might be readily applied to many forms of conventional built development but it would be a best very difficult, and more usually impossible, for any commercial scale wind turbine development to satisfy all of the requirements. That is relevant to the above provisions of PPSPPC as, to the extent that these policies might be interpreted as precluding wind farm development, I do not consider that 'the most exceptional circumstances' have been demonstrated to exist. The more recent EEP Policy SS9 includes different conservation criteria for the coastal environment with an emphasis on internationally-designated sites of importance to wildlife.
16. There are in any event different landscape criteria in LP Policy PU6 that are more specific to facilities for renewable energy, which would include wind turbines. It is therefore more appropriate to concentrate on this policy. It provides (amongst other things) that: 'Proposals for the development of renewable energy facilities will be permitted provided they would not: (a) have

- a significant visual impact on the appearance of the surrounding area, the countryside or local landscape; ...'. In that regard, whilst the policy applies to all forms of renewable energy, the Council accepted at the Inquiry that any commercial wind farm would have a 'significant' visual impact and that the correct test should include a consideration of 'harm'. Otherwise, an ostensibly permissive policy would effectively embargo any wind farm developments anywhere in the District, contrary to PPSPPC paragraph 20.
17. Policy PU6 includes the additional requirement that renewable energy facilities would not: (b) (ii) have an adverse impact upon areas of ... landscape ... importance.' No national landscape designations apply to the appeal site. LP Policy CC7 included the appeal site within a Special Landscape Area (SLA) where permission was not to be given for development unless it conserves or restores the character of the area (which character is not defined in the policy or text). That policy has been saved. However the LP supporting text refers at paragraph 3.44 to the SLA being superseded by Landscape Character Assessments (LCA). The national Planning Policy Statement 7 'Sustainable Development in Rural Areas' (PPS7) also prefers the use of criteria-based policies utilising tools such as LCA, rather than rigid local designations (such as an SLA).
 18. Several LCAs have been prepared Since the LP was adopted. However the development plan policies have yet to be updated in response to their recommendations. The Council's landscape witness agrees that the most relevant (and recent) LCA is that by Blandford Associates for Maldon and neighbouring districts in 2006. That LCA places the appeal site within the defined 'D7 Bradwell Drained Estuarine Marsh'. It is also adjacent to the 'D8 Dengie Drained Estuarine Marsh' which includes a narrow strip to the east but which also extends over a much larger area in the south of the peninsula. In contrast to the Arup Report, both areas are described as having 'high' sensitivity to change.
 19. For the D7 and D8 areas the LCA defines identical key characteristics that include 'mostly arable farmland on reclaimed marsh', 'a sense of huge sky', 'sound of birds', 'tranquillity', 'panoramic views', 'the absence of trees except around isolated farms', and 'the absence of settlements'. The more detailed assessments of visual character for each area also identify some other common characteristics such as a 'strong sense of being windswept and desolate'. The CPRE tranquillity mapping exercise reinforces the assessment that this is a tranquil area. I agree with these assessments of landscape character. The LCA remarks that both areas provide long views across the flat lands of the Chapel of St Peter's-on-the-Wall, and of Bradwell Nuclear Power Station (NPS) and its associated pylons. I consider that these built elements contribute to the area's present landscape character and that they have introduced more vertical elements into an essentially flat and low lying area. The proposed turbines would be still taller vertical structures that would be seen against the sky from all angles, as the wireframe images in the Environmental Statement clearly demonstrate. As the sky is so extensive it is better able to absorb structures as large as those proposed, particularly as the turbine towers and blades would have a slender form. The impact at ground level would be limited because the ground is so low-lying and because the turbine towers would occupy only small individual footprints, particularly by comparison with the

NPS. The concrete foundations would be below ground level and the flat character of the reclaimed marsh would thus remain largely intact at their base.

20. In the LCA, some differences between D7 and D8 are identified in their visual characteristics and in the key planning and land management issues. Whereas the proposed Landscape Strategy Objectives for both areas include the common objective to 'restore' historic landscape patterns and features, the companion objectives differ in that they are to 'conserve' the D7 landscape but to 'enhance' the D8 landscape. The D8 enhancement objective allows for the introduction of 'new and/or enhanced elements where distinctive features or characteristics are absent'. It is not clear that this would extend to a development as large and as different as a wind farm notwithstanding the potential for wind farm development that was identified by the LCA as a key issue in Area D8. Neither do the accompanying guidelines otherwise clearly indicate how to respond to that potential. The subject wind farm proposed in this appeal for Area D7 is similarly highlighted as a key issue for that area but without further specific reference. Nevertheless the suggested landscape planning and land management guidelines highlight conservation measures for both areas D7 and D8. In any event the 'conserve and restore' objectives for D7 and the suggested guidelines have not been translated into adopted development plan policy or a Supplementary Planning Document following appropriate consultation processes. This limits the weight to be accorded to them.
21. The wind turbines would be large structures visible over a wide area extending several kilometres across land and sea. They would result in a significant change in landscape character. Whilst modest nature conservation enhancements can be incorporated in the development, their positive landscape impact would be at ground level and they would be dwarfed by the scale of the turbines. However the large skies would provide a neutral background for the tall but slender structures. The degree of change would also diminish with distance. The turbines would dominate their immediate surroundings where they would create a 'wind farm landscape character'. However in more distant views the turbines would become but one element in a wider landscape and skyline that might be termed a 'drained estuarine marsh with wind farm'.

Visual Impact

22. Whilst the visual impact would be greatest in the central part of the D7 landscape character area, such as in views from the public footpath through the site, and from the adjacent areas to the east and west, it would diminish in the northern part of D7 towards the airfield and the Nuclear Power Station, and also towards the southern part of area D8. From the west and within the settlements of Bradwell-on-Sea and Tillingham, some views would be restricted by buildings and foliage. Where they could be seen the turbine's slender form would only marginally obstruct panoramic views of the wide skies and the reclaimed marshland, particularly by comparison with the NPS or other more conventional buildings. However the size and movement of the turbines would be a distraction that would affect the viewer's perceptions of the area.

23. I accept the Appellant's point that individual responses to the sight of wind turbines do vary. Some people see them positively for their aesthetic qualities or because of their function in providing clean energy and addressing climate change. Others see them negatively, particularly where there is a perceived contrast with valued characteristics of their surroundings or where there is other perceived harm such as a noise impact. Occasional sight of the turbines on a visit to the area may also have less of an impact than daily visibility from a person's home. These differing views may be strongly held, although perceptions may also change over time. Several of those at the Inquiry who objected strongly to the proposed development also made it clear that they considered the more distant Gunfleet Sands offshore wind farm visually acceptable. However I can attach little weight to the Appellant's 'Allegra' evidence which suggests that most people consider wind turbines acceptable in their local area. The extent of that local area is not defined and it is capable of wide interpretation. It is also not clear what proportion of those questioned have direct experience of such development as 78% were unaware of any local initiatives in their area related to renewable energy. In any event it appears that a majority of adults in Bradwell and Tillingham support BATTLE in opposing the appeal scheme. However some support for the wind farm has been expressed locally by the Othona Community (which has a base adjacent to St Peter's Chapel and which makes use of that building) and by others from beyond the immediate area including from witnesses living north of the Blackwater.
24. Apart from local residents, the turbines would be seen by visitors to the area and especially: those travelling to and from St Peter's Chapel; walkers using the local footpaths (which are widely promoted); birdwatchers; and those passing at sea and in the Blackwater estuary. However the reactions of those viewers can also be expected to vary.
25. I consider the effects on St Peter's Chapel below in relation to its setting. For residents, walkers and other visitors I accept that the area is widely valued as unusually remote and tranquil and that this general conclusion is supported both by the LCAs and by the CPRE tranquillity mapping exercise. However that mapping exercise does not also demonstrate that the wind farm would have a seriously adverse effect on tranquillity. Wind turbines rank relatively low on the scale of those factors which the attitudes survey found to harm tranquillity and below such factors as the presence of electricity pylons or people. Where tranquillity mapping was undertaken after the development of 7 wind turbines at Coldham it does not appear to have prevented the achievement there of a good score for tranquillity.
26. For those who perceive the turbines negatively, there would be a marked and major adverse visual impact in the immediate environs of the turbines, but this would lessen with distance. In particular I do not consider that there would be a significantly adverse impact on views from the sea or across the Blackwater from where the present landscape appears as little more than a thin line on the horizon, punctuated by a few trees, pylons and the looming presence of the nuclear power station. However even within the Dengie Peninsula, many of the key landscape characteristics would survive including the windswept and desolate feel, the huge skies, the panoramic views and much of the present tranquillity. It is entirely to be expected that windfarms will be located in

windswept locations to capture the wind resource. The turbines will introduce additional movement beyond that associated with the action of wind on trees and the sea. However, as the CPRE mapping indicates the usual absence of a human presence and the daily traffic movements associated with most other forms of built development would help to retain the feel of tranquillity.

27. Whilst many visitors to the area would also see the Gunfleet Sands turbines, they would usually need to face away from the subject onshore wind farm to do so. Even when seen in the same views, because of the separation distance the Gunfleet turbines would usually appear so much smaller than the on-shore turbines that I do not consider that there would be a significant cumulative impact.

Conclusion

28. I conclude on this issue that the wind farm would introduce significant change to the landscape. Many viewers, but not all, would consider the visual impact as harmful to varying degrees and more especially at near distances. That harm would conflict with the first landscape criterion in LP Policy PU6. The wind farm would also conflict with some conservation and restoration objectives for area D7 of the Landscape Character Assessment and therefore with related objectives of LP Policy CC7 and the second landscape criterion of LP Policy PU6. Nevertheless many of the key landscape characteristics of the area would be conserved including the windswept and desolate feel, the huge skies, the panoramic views and much of the present tranquillity. Some people would view the turbines more positively and there would be no significant adverse impact on the seascape. I consider that these factors substantially mitigate the identified harm to the landscape. There nevertheless remains harm which needs to be weighed against any benefits of the development. These may include the benefits of renewable energy in combating the threats of climate change to the wider landscape of this low-lying coastal area.

b) The Setting of Ancient Monuments, Listed Buildings and Conservation Areas

29. Amongst the criteria of LP Policy PU6 is one that renewable energy facilities will be permitted provided they would not (amongst other things): '(b) (ii) have an adverse impact upon areas of ... architectural, ..., historical or conservation importance'. No harm has been alleged by the Council or English Heritage to the views to and from the Bradwell or Tillingham Conservation Areas. I agree that their character and appearance would not be harmed. Neither has the Council or English Heritage alleged harm to the setting of any listed building or scheduled ancient monument (SAM), with the exceptions only of the Grade 1 listed St Peter's Chapel and the associated Othona Roman Fort SAM.
30. The English Heritage document: 'Wind Energy and the Historic Environment' acknowledges that climate change is itself likely to be detrimental to the historic environment for reasons which include the effects of rising sea levels and increased 'storminess'. The document also points to the reversibility of wind energy developments which can further mitigate their impact. In this case the expected 25 year life of the windfarm would be short relative to the longevity of St Peter's and the SAM.

St Peter's

31. St Peter's can be seen at considerable distances across the reclaimed marshland, particularly from the south and west and also from the sea. Whilst resembling an agricultural barn, and used as such for much of its life, it is noticeably taller than most barns and has a strong vertical emphasis. It is a simple structure that has been altered and partially reconstructed and now contains few notable architectural features. However the building is of great historic interest as one of the oldest surviving churches in England and as a rare surviving example in this region of an early stone building.
32. The definition of setting in English Heritage's 'Conservation Principles' is: 'The surroundings in which a place is experienced, its local context, embracing past and present relationships to the adjacent landscape'. I do not accept the Appellant's argument that the setting is limited to a small and somewhat arbitrarily circumscribed area close to the building. Instead I consider that the setting does extend to a much wider area within which the building can be seen and identified. However the impact of the development on that setting will vary according to the juxtaposition of St Peter's and the development in the same views and will also diminish with distance.
33. There is advice in Paragraph 2.26 of PPG15 to take account of the historic landscape which is here also relevant to the setting of St Peters. The historic landscape from the time of the development of St Peter's and through the middle ages, when the salt marshes were grazed, has since changed as the result mainly of: the reclamation and draining of the marsh; the construction of sea defences; the conversion of the marshland from grazing to arable production; and the more recent intensification as modern large-scale arable farming with larger fields and fewer trees and hedges. The nuclear power station also has a wide influence in views across the area. Its associated power lines pass across the marsh on pylons close to the appeal site. Whilst currently out of use it appears likely that this or another higher voltage power line will be retained on a similar route in association with a new nuclear power station.
34. The development would not achieve the conservation and restoration of historic landscape patterns sought by the LCA. Commercial wind turbine development is very much associated with the 21st century and would contribute further change. Nevertheless, the surviving elements of the historic landscape would remain visible below and between the turbines and the visible development would be reversible.
35. Notwithstanding the past changes to the historic landscape, the remote coastal situation of St Peter's, in a tranquil location well away from any settlement, enhances the appreciation of the building for those visiting it whether for its historical interest or for spiritual reasons. In distant views, those who were previously aware of the building and its historical and spiritual significance will have an enhanced appreciation of it from other visitors. If approaching the building on the principal footpaths from the south or west, it can be seen from a long distance within a wide and open landscape. The proposed wind farm would also appear in some of these views and would, during its lifetime, contribute a further change in landscape character away from that existing at the time that the chapel was built. However open views would remain available across the reclaimed marsh and it should still be possible for visitors

to imagine the original setting of the chapel adjacent to the undrained marshland without the on-shore and off-shore turbines, the power station and pylons, the sea wall and the modern agricultural landscape.

36. Only at a long distance from the south west would the wind farm appear directly in front of St Peter's. However from here the chapel would appear as only a tiny and relatively insignificant feature in the landscape, particularly as seen from the small number of residential properties in this direction. For those walking towards the building, that partial obstruction to direct views would soon clear. In particular pilgrims and others using the St Peter's Way approach route would then have a long time to appreciate the distant views of St Peter's in its isolation as they continue north along the sea wall. The wind farm would then only be one element in long and wide 360 degree views. For a significant time during the latter part of their journey, the wind farm would be behind their left shoulder where it would not impinge at all on views of the chapel. For the larger number of visitors approaching from Bradwell village and the car park along the former Roman road, the wind farm would appear initially at the side of their intermittent long views of the chapel and then back over their right shoulder, again allowing an appreciation of the building's still-isolated location.
37. Views of St Peter's from the north are already more curtailed by topography and vegetation. Those on the final approach to the building along the coastal footpath from this direction might see the turbines behind or to the side of the chapel. However the operation of perspective means that the turbines would appear relatively small and they are unlikely to be visible in a dominant position above the roof of the building. A photo-montage published in the Daily Telegraph is misleading in this regard.
38. In more distant views from the sea, the turbines could appear behind and above the chapel from some angles. However this impression would be fleeting as most such viewers would be on moving craft. Moreover the historical and spiritual dimension of the building is likely to be less significant for those at sea who would not be visiting the chapel itself.
39. Views from a listed building are also relevant to its setting. However from inside the building the turbines could not be seen from any window and could only be seen at an oblique angle when leaving through the door. The turbines would be visible (in one direction only) to those looking out from the area around the building, including the overspill congregation from the occasionally large religious services held at the Chapel. Whilst tall buildings can affect the setting of a listed building from some distance (PPG15 paragraph 2.17), in this case I consider that the separation distance to the nearest turbine would be sufficient to mitigate their impact in such views. There would remain long views between and to either side of the turbines and the overall outlook from the vicinity of the chapel would be of a 'drained estuarine marsh with wind farm' rather than of a 'wind farm landscape'.

Othona Roman Fort SAM

40. Part of the original 3rd century Roman fort was lost to the sea many years ago as the result of coastal erosion. At the Inquiry, the English Heritage witness accepted that the setting of the (largely buried) SAM is less sensitive than that

of St Peter's (which was built in about 654AD on top of the fort using reclaimed materials) whilst maintaining that the fort adds to the historical significance of the Chapel. In practice I do not consider that the wind farm would have any significant effect on the setting of the SAM when considered in its own right.

Bradwell Lodge

41. BATTLE claims additional unacceptable harm to the setting of the Grade II* Bradwell Lodge. That house is of both architectural and historic interest. It was previously associated with the ownership of much of the former marshland including the site of the wind farm. Indeed a substantial drainage programme was carried out by an 18th century owner and it appears that the increased farming revenue may have helped to fund the improvement and enlargement of the house itself. However in the 20th century the ownership of the farmland (and thus control of the views across it) was divided from that of the house.
42. Unlike St Peter's, public views towards the house are limited with only glimpsed views available from beyond its own garden and modest park. The main concern is with views out. In this regard I saw that many of the principal ground floor rooms face south where their outlook is already affected to a degree by the electricity pylons. A number of the turbines would be visible from those rooms and from the garden and some first floor rooms. However these views would be mitigated by distance and perspective such that the apparent height of the turbines relative to the pylons and a number of large trees would be reduced. The trees would also contribute partial screening.
43. A more open view above the trees would be available from the top floor 18th century belvedere. That was clearly designed to provide all-round views both above the village buildings inland and towards the Blackwater and also over the marshland towards the sea and as far as the Kent coast. Two off-shore wind farms can already just be seen in the far distance. A clearer view of the on-shore turbines would be available from this level. However it would still be possible to see equally long distances between and past the turbines. The original function of the room to provide extensive views would thus be substantially unimpaired. I therefore agree with the Council and English Heritage that the setting of this building would not be unacceptably harmed.

Conclusions

44. I conclude on this issue that the wind farm would have an adverse impact on some aspects of the wider setting of St Peter's Chapel such that it would not be preserved. Neither would the setting be enhanced. In particular the wind farm would intrude into some long views to and from the Chapel in which the scale and movement of the turbines would distract some attention from the building and further alter its landscape setting. However that landscape setting has already changed since the chapel was erected. Moreover these effects would be mitigated by the separation of the turbines from the chapel and by the long and wide views that would remain available to and from the building. The separation distance would diminish the relative scale of the turbines. The wide vistas available around the building would still allow the remote and isolated context of the chapel to be appreciated. The adverse impact and associated conflict with LP Policy PU6 would thus be diminished. There would nevertheless be harm that would need to be weighed against any benefits of the

development, including benefits of renewable energy in combating the threats of climate change to the wider historic environment.

45. The vulnerability of the location to rising sea levels or increased 'storminess' due to climate change is illustrated in that Othona Fort is itself much reduced in size due to past coastal erosion. The development would thus be more likely to assist rather than harm the physical preservation of that monument (and of St Peter's). Neither do I consider that there would be significant harm to the setting of the Othona Fort SAM or Bradwell Lodge or of other historic buildings, structures or conservation areas.

c) Living Conditions

46. LP Policy PU6 includes the provision that renewable facilities will be permitted provided they would not (amongst other things): '(b) (i) generate an unacceptable level of noise ...; or (iii) have a detrimental impact upon adjoining properties and landholdings.'
47. The greater the separation between turbines and dwellings the less likely is it that there will be unacceptable effects in relation to noise and outlook. However the practicality of achieving wide separation is dependent on the density of residential development which is inevitably higher in the East of England than, for example, in rural parts of North America and Scotland where greater separation can be achieved. The Arup study applied a 500m separation distance from properties with postcodes as a proxy strategic constraint to model noise considerations around dwellings. The mapped results (which also include other strategic constraints such as low wind conditions, nationally protected landscapes and nature conservation areas) indicate the relative scarcity of land in this region without such constraints. The Dengie Peninsula contains one of the few such large areas in Essex.
48. Table 14.1 of the Environmental Statement indicates the distances of dwellings from the nearest turbine. The landowner's house is, at 600m, the nearest. The nearest independent dwelling is Munkins Farm (to the North) at 630m. The separation distances then rise significantly with examples such as Eastlands (N) (710m), Fairview (N) (750m), Sandbeach (S) (880m), Packards (SW) (1230m) and Delameres (NW) (1440m). There are other dwellings between these distances.

Noise

49. An adequately accurate survey of background noise levels at representative locations is important to the subsequent imposition of noise controls. The Council was given the opportunity to agree the method and locations for the background noise survey before it was undertaken by the Appellant's acoustics consultants but declined to take up that offer. The Council does not now dispute the way that the survey was conducted or its results. Whilst BATTLE has raised a number of detailed criticisms, such as the locations chosen for the monitoring equipment, these are not supported by any alternative survey results to support BATTLE's view that the results may have been inaccurate. Neither was it obvious from the locations which I inspected that they would have significantly distorted the survey results.

50. At times background noise levels are notably low on the Dengie Peninsula owing to the sparse development and the present absence of traffic and industry from most of the area. Such low noise levels are typical of remote rural areas. They would be at their lowest in still weather conditions. However background noise levels do rise in windier conditions for reasons which include the sound of wind in trees and other vegetation. There is therefore scope for rising background noise to mask rising turbine noise emissions, which also vary with the wind speed, although the Environmental Statement predicts that turbine noise may also exceed background noise by varying amounts at particular wind speeds.
51. Paragraph 10 of PPG24 'Planning and Noise' acknowledges amongst other things that much development of essential infrastructure will generate noise and provides that the planning system should not place unjustifiable obstacles in the way of such development although it must not cause an unacceptable degree of disturbance. Planning Policy Statement 22 'Renewable Energy' (PPS22) - at paragraph 22 - and its Companion Guide provide that renewable energy developments should be located and designed in such a way as to minimise increases in ambient noise levels and states that ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms' (ETSU) should be used for the rating and assessment of noise from wind farms. This is also agreed in the Statement of Common Ground between the Appellant and the Council.
52. Where there is higher background noise, ETSU relates noise immission limits to actual background noise levels. However when there is low background noise, such as may occur in this area, set noise limits are recommended within the LA90,10min 35dB-40dB range. The Appellant argues that it is only necessary to establish the probability that these maximum noise limits will not be exceeded and then to consider how to address the situation if that proves not to be the case in practice. It is clear in ETSU that this approach was adopted because lower noise limits would be unduly restrictive on developments which are recognised as having wider national and global benefits and because lower limits are not necessary in order to offer a reasonable degree of protection. At the Inquiry the Council contested the ETSU approach in this regard notwithstanding its previous agreement to the use of ETSU in the Statement of Common Ground. However, having regard to the advice in PPS22, I consider it inappropriate to depart from ETSU.
53. The other main point at contention between the Council and the Appellant is the level within the 35dB-40dB range at which the maximum daytime noise limit for immissions should be set at those residential properties with no financial involvement in the wind farm. The Council contended at the previous Inquiry, and initially at this second Inquiry, that the limit should be 35dB whereas the Appellant contends that it should be 40dB. The Council subsequently modified its position to propose a planning condition with a 38dB maximum.
54. ETSU cites 3 factors for determining the appropriate noise level within the 35-40dB range: 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. On the first count the number of dwellings near to the wind farm is relatively small. Provided that the set maximum noise levels are not exceeded at these nearest dwellings, noise levels within the main villages

- of Bradwell and Tillingham should be lower because of the greater separation, albeit they may remain above 35dB at some locations.
55. On the second count, the Council points to relatively narrow margins between the predicted noise immissions and the 40dB maximum noise limits used by the Appellant. That suggests that to comply with a lower maximum noise limit of 35dB or 38dB it would be necessary to modify the design of the development from that proposed. The likely means of achieving this would be to operate some or all turbines in a reduced noise mode and/or to increase the separation distances from residential property.
56. Although there are no figures before me, operating the turbines in reduced noise mode to meet even a 38dB limit would inevitably reduce power output to some extent. Moreover the scope for such noise reduction is likely to be limited. Also it is difficult to accurately predict noise immissions to within 1 or 2db. Thus if these measures are applied at the outset it would then be more difficult to reduce the noise levels further should the noise immissions at affected dwellings exceed those predicted and breach the set limits. If the operating noise could not be reduced sufficiently by such measures then the only option would be to stop the turbine, whether temporarily or permanently. As well as being inefficient in energy production, that poses an additional risk to the economic viability of the operation and creates uncertainty for the potential investor.
57. In terms of location, as there are dwellings to the north, south and west of the wind farm and a marshland nature conservation area of international importance to the east, moving a turbine away from one dwelling is likely to bring it closer either to another dwelling or to the protected marshland. To move the turbines outside the appeal site would require the consent of the relevant landowner. One reason given for the previous reduction in size of the proposed wind farm has been the unwillingness of some landowners to accommodate the turbines. Another was the need to maintain adequate separation from the marshland nature conservation areas along the coast which are important bird habitats. It is also necessary to maintain adequate separation distances between the turbines themselves because turbulence from one turbine can affect the efficient operation of others and may affect noise emissions. The only other means of increasing separation distances from dwellings would therefore be to reduce the number of turbines and site the remainder further from the edges of the appeal site with a proportionate loss of power output for each turbine removed.
58. The circumstances are different from those at the recently-dismissed Shipdham appeal (APP/F2605/A/08/2089810) where the turbines would have been as little as 432m from a dwelling. The Inspector there concluded that the separation distances had not been chosen to minimise increases in ambient noise levels (as required by PPS22 paragraph 22) as the turbines could have been sited further away on the same farm. All the turbines at the dismissed North Dover Appeal (APP/X2220/A/08/2071880) were within 570m of the nearest dwelling and thus appreciably closer than in the present case.
59. Moreover ETSU cites the example of a single turbine causing 40dB of noise at nearby dwellings as justifying a more restrictive approach to noise than a larger development of 30 wind turbines creating similar noise but with

commensurately greater power output. The appeal proposal is for only 10 large turbines. However their combined maximum power output of 15-25MW equates to the typical output of 30-50 x 0.5MW turbines at the time that ETSU was prepared in 1997, when turbines were smaller and less powerful. By contrast only 2 turbines were proposed at Shipdham, where a 35dB limit was proposed (and was predicted to be exceeded).

60. On the third count, ETSU suggests that: 'a property which experienced background noise levels below 30dB(A) for a substantial proportion of time in which the turbines would be operating could be expected to receive tighter noise limits than one at which background noise levels soon increased to levels above 35db(A)'. There are some residential properties here at which background noise levels would often be below 30dB(A) at lower wind speeds, However this includes at times when the turbines would be immobile and not generating noise. The number of dwellings at which these low background levels would be significantly exceeded by operational turbine noise for a substantial proportion of the time is much lower.
61. It is necessary to consider all three factors together. The 40dB limit is within the range recommended by ETSU for conditions of low background noise. Only a relatively small number of dwellings would be affected by the application of a 40dB rather than a 38dB limit and for only limited periods when the relevant background noise levels apply and the turbines are operating. For that and all the other above reasons I conclude on balance that a 40dB limit is justified in this case.
62. Late in the Inquiry BATTLE submitted newly obtained evidence that a draft 2006 report by the Hayes Mackenzie Partnership to the Department of Trade and Industry had recommended revisions in the ETSU night-time noise limits having regard to World Health Organisation advice on sleep disturbance. Whatever the case may be in that respect the Government in any event continues to endorse the ETSU limits.

Wind Shear

63. Wind shear denotes increasing wind speed with height above ground and is known to be more common in flat landscapes such as the appeal site. The accuracy of prediction of this effect has been improved since the previous Inquiry owing to the gathering of on-site wind data rather than relying on data from another site at Foulness. If wind shear were to occur the actual turbine noise would be higher than that predicted at lower heights closer to ground level. However, any consequential noise increases would still be subject to overall noise limits set in a planning condition or Section 106 Planning Obligation, even if they exceeded the amounts predicted by Mr Jiggins on the basis of only 1 standard deviation. Consequently these effects would be a commercial risk for the operator, rather than a risk of harm to living conditions, and would be no reason for dismissal of the appeal.

Amplitude Modulation

64. Amplitude Modulation (AM), sometimes referred to as blade swish or thump, is a recognised phenomenon and ETSU makes some allowance for it. However ETSU was unable to formulate an accurate measurement methodology or to establish the causes or the frequency and magnitude of its occurrence and left

the matter for further investigation. There is some evidence of subsequent complaints about 'excess' AM including different tonal characteristics. The Salford Report commissioned by the Government considered complaints that had been made about wind farm noise and concluded that the incidence of (excess) AM was low and affected few people. The Government concluded that there was not a compelling case for further research. Whilst BATTLE claims that the problem of excess AM was underestimated by the researchers, it remains the case that excess AM appears only to occur at a minority of wind farm sites. The lack of an agreed definition of what constitutes excess AM or an agreed basis for its accurate measurement makes it particularly difficult to construct a planning condition or other objective means of control. I note that when this issue was recently considered at the recent Wadlow Farm appeal, the Secretary of State agreed with the Inspector that no condition was necessary (Doc 5.33B - Appeal Ref APP/W0530/A/07/2059471).

65. The wording of an AM condition put forward by Mr Stigwood for BATTLE includes a number of apparently arbitrary measures that have not been adequately justified and which would be uncertain in their impact. I also consider the wording to be vague and imprecise with regard to when and by whom measurements would be carried out and how the results would be assessed and acted upon.
66. BATTLE point out that another of the recommendations apparently deleted from the draft Hayes Mackenzie 2006 report was that a 5dB reduction should be applied to the noise limits for the presence of high levels of AM to minimise the risk of sleep disturbance. The final report contained the modified text: 'However during the night time periods when high levels of modulation have been measured, it may be appropriate to apply a penalty to the incident noise from the wind farms'. It would not be appropriate here to apply any such penalty to the conditions imposed on the planning permission firstly because excess AM has yet to be adequately defined, secondly because there is no agreed objective measurement of excess AM, and thirdly because it may never arise at all.
67. The Appellant suggests that excess AM can only be addressed by the local authority using statutory nuisance powers. That would not depend on precise technical measurement as more subjective means of assessment could be applied by environmental health officers. In the absence of an agreed alternative means of applying an effective condition, and because the balance of probability suggests that the risk of excess AM occurring is small and would affect few people, it would not warrant the dismissal of the appeal. I conclude that statutory nuisance procedures are the best means currently available of addressing this issue, should it arise.

Enforceability

68. The Council accepts that 'technically' a condition could be drawn up to control operational noise and that would be its preferred approach. Indeed substantial agreement had been reached between the acoustics witnesses for the Appellant and the Council on the form that such conditions would take, apart from some remaining differences including the appropriate maximum day-time noise levels. However the Council then concluded that practically the steps to deal with any potential breach of the conditions would be so complex and difficult as

- to bring the effectiveness of the condition into question. On that basis the Council questions the lawfulness of the conditions in relation to enforceability or reasonableness under the tests for conditions set out in Circular 11/95.
69. The Appellant's response has been to submit a S106 unilateral undertaking which is no less complex but which would have different means of enforcement and which is not subject to the same 11/95 tests. BATTLE would prefer the use of conditions (albeit with different wording) and has criticised many legal and technical aspects of the submitted S106 undertaking. The Appellant has made modifications to the draft undertaking but BATTLE maintains a number of objections to its provisions. The Appellant has also submitted revised draft planning conditions which more closely resemble the noise management scheme proposed in the undertaking but would be alternative to that undertaking. BATTLE would prefer the use of conditions but has proposed different wording for the main condition. The Appellant's noise consultant has raised a number of technical objections to that wording and I do not consider that a departure from the ETSU approach has been adequately justified.
70. Whilst ETSU refers to the possibility of using S106 obligations to control noise, ETSU-style planning conditions are in widespread use and have been endorsed by the Secretary of State in many previous decisions. There is a lack of evidence that they are in practice ineffective. Paragraph B51 of Circular 05/05 'Planning Obligations' also advises that, where possible, planning conditions are preferable to obligations for reasons which include their more ready enforceability.
71. I acknowledge that the Inspector for the Shipdham Appeal concluded that the planning conditions before her failed the test of enforceability and were too complex and unwieldy for frequent use. However, those conditions were worded differently and were considered to lack precision. Moreover it was anticipated there that the set noise levels would be frequently exceeded, which I do not consider to be likely here.
72. I accept that the procedure for confirming and enforcing against breaches of the noise limits is complex and potentially lengthy. However one potential reason for delay would be the need to wait for weather conditions to reflect those persisting at the time of the original complaint before undertaking the necessary noise measurements. I do not regard that as causing unreasonable harm for residents since, if the harmful noise is only experienced in particular weather conditions, it would not be suffered when those conditions are absent. The more frequently the harmful noise occurs, the easier it would be to measure its effects. Moreover it would be quicker to serve a breach of condition notice (against which there is no appeal) rather than to follow the enforcement provisions for a S106 obligation. I conclude that conditions can be adequately enforceable. Neither do I consider that they are unreasonable, particularly as I consider that the Circular 11/95 test of reasonableness is directed primarily at the effect on the developer rather than at the interests of third parties.
73. With reference to other BATTLE comments, I do not consider that it is necessary to add a requirement that the list of consultants be updated during the life of permission since any such need could be addressed as and when it arose. Neither is it reasonable to exclude the use of the professional noise

consultants who made the original assessment. I consider that it would be impractical to define in the guidance notes which atypical 'noise outliers' such as the dawn chorus or helicopters should be excluded. It would be for the acoustician to show that the results were robust having regard to such considerations. The reference in Note 1(b) to the specification by the Local Planning Authority of the conditions under which the survey shall be carried can have regard to wind shear amongst other factors. I have amended the wording of Condition 24(vi) to provide for the measuring of wind speed and data at 2 heights to be approved by the local planning authority.

74. For these reasons I conclude that it is necessary and reasonable to attach a planning condition to control noise and that this would be effective and preferable to the submitted S106 unilateral undertaking. The terms of that undertaking provide that it would not come into effect if such a planning condition is applied. No condition is necessary in respect of amplitude modulation.

Outlook

75. It is a well-established planning principle that there is no right to retain unchanged a view from private property. However it can be in the public interest to safeguard the outlook from such property in respect of unacceptably overbearing or dominating development. I saw that some private residences such as Munkins currently enjoy very open outlooks towards the proposed site of the turbines although at others such as Cricketers Cottage the outlook is at least partially restricted by buildings or planting within their private gardens or at neighbouring property. The visual impact on individual properties will vary for that reason and also according to the varying separation distances and orientations of the dwellings and their main rooms and gardens.
76. I acknowledge that the Inspector for the dismissed Market Drayton appeals (APP/L3245/A/08/2088742) concluded that there would be unacceptable harm to outlook at distances of about 700m from 100m high turbines whereas the Inspector for the allowed Den Brook appeal (APP/Q1153/A/08/2107162) (decided 22 March 2007) concluded that 120m high turbines would not result in unacceptable living conditions for occupiers at a similar 700m distance. The latter Inspector subsequently concluded at the North Dover Appeal that turbines there would have been unacceptably dominant at distances of 360-570m. I am not aware of all the circumstances of these cases. However whilst I appreciate that the view for occupiers of the nearest dwellings here such as Munkins Farm (630m) and Eastlands (710m) would be negatively affected, I do not consider that the turbines would be unacceptably overbearing or dominating of their outlook. At other more distant dwellings such as Packards the wind farm would be seen as a smaller element in a wide view across the marsh. Whilst the environment of these dwellings would certainly change, the wind farm should not make them unattractive places to live.

Conclusions

77. Whilst noise levels would noticeably exceed low background noise levels at some dwellings at some times, the proposed noise limits would be reasonable for this scale of development and it is likely that the limits defined by ETSU can be achieved. The opportunity to operate the turbines in reduced noise mode at

reduced output provides a safety margin if the limits are found to be exceeded in practice. Whilst it might necessarily take time to assess and rectify any infringements owing to the need to await suitable weather conditions, if such conditions are scarce, then the associated excess noise would be endured for shorter periods. The risk of excess amplitude modulation is small, is unlikely to affect more than a few people if it occurs at all, and should be capable of rectification using statutory nuisance powers. Whilst I do not conclude that there would be no risk of harm to living conditions in respect of noise, the risk of significant or prolonged harm would be acceptably small. Whilst there would be a negative effect on outlook for some residents, the wind farm would not be unacceptably dominating or overbearing so as to contravene the public interest in that regard. I nevertheless conclude that the risk of some harm in these respects means that there would be literal conflict with some relevant criteria of LP Policy PU6.'

d) Aviation

Safety

78. Saved LP Policy CON7 provides that planning permission will not be granted for wind farms if (amongst other things) the proposed development would have a detrimental effect on the safe operation of the relevant airport. Paragraph 96 of the Technical Annex to the Companion Guide to PPS22 places the onus on the applicant to prove that the proposal will have no adverse effect on aviation interests.
79. The wind farm would be in line of sight of the primary radar at London Southend Airport (LSA). When turning, one or more of the turbines would often paint on the radar. These images might resemble moving aircraft and thus would not be filtered out of the radar display. The airport is not equipped with secondary surveillance radar that would identify and give height information for aircraft and in any event many of the aircraft operating in the area are not suitably equipped to transmit that information. There has been no agreement between the Appellant and LSA that any form of technical mitigation is both necessary and possible. In particular, whilst in-fill technology has been applied at Glasgow Airport, LSA's present analogue radar is not readily compatible with digital infill radar. It would need to be replaced by a plot extracted system. However there is no current plan for such provision.
80. Since the previous Inquiry, the Civil Aviation Authority has revised its CAP 764 Policy and Guidelines on Wind Turbines. The main safety concerns of LSA relate to paragraph 1.8 of that document in that the resulting clutter may conceal an aircraft within the clutter. If, in those circumstances, pilots were relying on a radar service from LSA rather than visual flight rules to maintain separation and if the LSA Air Traffic Control Officer (ATCO) misinterpreted the radar display, then LSA considers there could be a risk of collision between aircraft. However that risk is disputed by the Appellant's witness who considers that the radar impacts are well within the normal capabilities of the ATCOs to handle them.
81. LSA does not at present control the airspace around the airport. However there is controlled airspace at higher altitudes above 5,500ft which is busy with aircraft over-flying on their way to and from the principal London Airports.

Most air traffic currently using LSA comprises smaller aircraft for business, leisure or training purposes. There are also movements in the area of other small aircraft including helicopters and microlights. Many aircraft have no contact with LSA and rely on visual flight rules to maintain separation from other aircraft. Others only seek a low order of radar service. LSA only rarely provides a full Radar Deconfliction Service that seeks to maintain horizontal separation between aircraft of 5nm or more (about 1-5% of all flights or 185 times a year). However this could increase as the airport also has ambitions to extend its runway to attract larger aircraft on scheduled or charter services (see below). In that event, with the anticipated growth of passenger numbers, the airport is likely to upgrade its radar equipment and to apply for control of its airspace. In the meantime, proposals to create a holding area close to Bradwell for aircraft waiting to land at London City Airport have been deferred and that facility might be provided elsewhere.

82. The wind farm would be within a zone of restricted airspace around Bradwell Nuclear Power Station that extends up to 2000ft. Most air traffic is excluded and would need to either fly around the restricted area or to over-fly it at a greater height. This would include recreational aircraft flying along the coast, air-show traffic, and those practising aerobatics over the sparsely populated peninsula. Most of these aircraft would be operating under visual flight rules. Some aircraft are allowed to enter the restricted area below 2000ft, including emergency services helicopters or those associated with use of the power station. These aircraft would operate regularly in the area. However this exception apparently does not apply to low flying military aircraft which remain excluded.
83. Lighting mounted on the towers would have the potential to draw additional attention to the wind farm in an otherwise dark area when seen from the ground, especially if the lights appear to flash when interrupted by the passage of the turbine blades. This could be mitigated to some degree by the use of low power lighting directed at those (typically military aircraft) with night vision equipment. However there is a lack of evidence before me to assess the visual impact of such lights. The submitted proposals do not include lighting and I do not propose to require them as a condition. However in the event that the Ministry of Defence or others were to provide a more compelling safety case to fit lighting in the future, in circumstances where planning permission might not be needed, I propose a condition which would require the consent of the Local Planning Authority who could then weigh the relevant safety and environmental considerations.
84. The Appellant does not now dispute that the turbines could interfere with the radar display within a number of clutter cells. However it is disputed whether aircraft would necessarily be concealed. Since the previous Inquiry, the Gunfleet Sands wind farm has been installed and that also paints on the LSA radar. LSA does not object to that development which is further from the airport and is in an area with reduced local air traffic. However there is evidence before me of an exercise to establish whether a Cessna 152 light plane was concealed when it flew over those turbines. The submitted images suggest that the plane was intermittently missed in some sweeps of the radar but that it remained visible at other times. Nevertheless, as previous sweeps

remained visible, the loss of one or more sweeps did not remove all evidence of the presence of an aircraft from the display.

85. There also appear to be characteristic differences between the images of the wind turbines and those of moving aircraft, not least the size of the images and the longer tracks made by aircraft across the screen. The positions of the turbines are easily marked permanently on the display and I conclude that ATCOs would rapidly become familiar with these differences. It seems highly improbable that aircraft might enter the area undetected and then circle (or hover) entirely within the clutter cells (and above the restricted airspace) and thereby be concealed for longer periods. Moreover light aircraft are more likely to be travelling approximately N-S along the coast rather than E-W out to sea. They would thus be more likely to cross the narrow axis of the wind farm rather than its long axis. They would then only enter the clutter cells for brief periods. Evidence before the Inquiry that other UK airports operate safely with wind farms in their vicinity was not significantly challenged.
86. ATCOs already normally avoid the area proposed for the wind farm when vectoring aircraft on approach to LSA but may direct aircraft through that area on occasion. However they would not do so now if there was another aircraft already there and would not in the future had they seen an aircraft enter the area. I consider it likely that they would be able to continue to detect such aircraft over the wind farm even if the image is degraded. Should there be doubt as to the presence of such aircraft, avoiding the wind farm would reduce but not remove the options for diverting aircraft. However I consider that this would be a rare occurrence and it has not been suggested by LSA that they would establish an exclusion zone around the wind farm whenever a deconfliction service was to be provided.

Economic Effects

87. The previous Inspector was aware that LSA had ambitious expansion plans but concluded that there was a lack of evidence of real progress towards such expansion. Whilst there has since been a fall in passenger numbers, mainly due to the loss of a Ford Motor Company contract, the airport's prospects have otherwise improved in that the railway station is under construction, the airport has new owners with funds for expansion, and a planning application has been submitted to extend the runway. In the context of generally supportive development plan policies, there appears to be a real prospect of the expansion plans coming to fruition.
88. LSA remains concerned that the wind farm could hamper its expansion. However paragraph 10.1 of CAPS 764 emphasises that, whilst it is appropriate for an airport to include an assessment of economic impact, any comments made in this respect need to be unambiguous. The LSA case falls seriously short in this regard and relies heavily on vague assertion. The suggestion that some airlines might be deterred from using the airport is not supported by substantive evidence and is contradicted by the on-going expansion of comparable airports with windfarms in their vicinity, such as Newquay and Leeds-Bradford. Moreover the likelihood that the expansion of the airport would be accompanied by control of the airspace and radar improvements such as secondary radar should diminish rather than increase any risks associated with the wind farm. There is a lack of evidence to quantify assertions that any

diversion of aircraft to avoid the wind farm would materially increase fuel usage or CO2 emissions.

Conclusions

89. I conclude on this issue that the development would not have a detrimental impact on aviation interests including the safe operation of London Southend Airport and would not contravene relevant provisions of the development plan in those regards. On the information before me neither would it have a detrimental effect on the airport's proposed expansion or the associated economic benefits.

e) Ecology

90. Amongst the criteria of LP Policy PU6 are that renewable energy facilities will be permitted provided they would not (amongst other things) : '(b) (ii) have an adverse impact upon areas of ecological, ..., importance'. Natural England (NE) and the RSPB had withdrawn their objections before the previous Inquiry. NE expressly stated in a letter dated 27 April 2007 that the development would not have an adverse effect on the integrity of the adjacent sites of European importance for nature conservation (Dengie SSSI/SPA/Ramsar site and the Blackwater Estuary SSSI/SPA/Ramsar site). The primary concern at the previous Inquiry related to the impact on birds. At neither Inquiry did Maldon District submit any evidence in relation to the original reason for refusal. However BATTLE submitted evidence in relation to birds and also to bats.

Birds

91. BATTLE's main concern is a risk of collision between birds and the moving turbines, particularly if a roosting flock is startled by a raptor. It appears that the circumstances have not materially changed since the previous appeal. There is also some dispute as to how far inland of the sea wall and towards the appeal site birds may roost when high spring tides cover the saltmarsh. Nevertheless whilst the loss of birds to turbine strike cannot be ruled out, there is no substantive evidence that this would occur here to an extent that would justify resisting the development.

Bats

92. Bats are protected species and the Appellant accepts that there is some generic risk of collision between bats and turbines. However the proposed turbines would be located to comply with NE guidance that there be a minimum 50m buffer between known bat foraging/commuter routes and rotor blades. BATTLE makes some criticisms of the bat surveys made in 2004-05 which did identify some bat roosts over 500m from the turbines and objects that bat habitat features and movements may have changed since then. In that regard NE has requested in a letter of 30 October 2009 that, should the appeal be successful, further comprehensive pre-construction bat surveys be provided. The letter specifies matters that the surveys should cover.

93. BATTLE refers to the cases of *R v Cornwall County Council ex parte Hardy* and *R (on the application of Simon Woolley) v Cheshire East BC*. In the Hardy case there was a recognised need for bat surveys but the Council had determined there would be no significant nature conservation effects before such surveys

were carried out. In this case surveys have been carried out and there have been no obvious changes in the physical circumstances since then. In the Woolley case it was inevitable that a licence would be needed to disturb bats and therefore the Council needed to have regard to the Habitats Directive and the three tests for granting a licence. In the present case there would be no direct or deliberate harm to bats or their habitat and no licence is likely to be needed.

Conclusions

94. I conclude based on the previous survey evidence that there is unlikely to be a significant effect on bats as a protected species. The turbines can also be sited to avoid harm to other protected species in the area including water voles and badgers. Neither do I consider that there would be any significant effect on birds or their habitats or on the integrity of the adjacent European sites. The proposals would therefore not contravene the above criterion of LP Policy PU6. Regard should also be had to the potential adverse implications of climate change for natural habitats more generally. The provision of renewable energy can reduce such risks.

f) Traffic and Transport

95. LP Policy PU6 includes the provision that renewable facilities will be permitted provided they would not (amongst other things): '(b) (i) generate an unacceptable level of ... traffic;' Neither the Highway Authority nor the District Council have raised objections in this regard. However BATTLE and others object in relation principally to the construction traffic which would include a substantial number of heavy goods vehicles movements including a proportion of abnormally large loads.
96. Whilst much of the proposed construction access route would be on a rural Class C road, I saw that the road is generally of reasonable width and that it has previously been the subject of numerous improvements that have eased the sharper bends. These were probably prompted by the original development of the nuclear power station. I saw that this road is signposted as the main route to and from Bradwell in preference to the parallel B road through Southminster and Tillingham. That B road and connecting side roads nevertheless provide an alternative route into and out of the area should the proposed access route be obstructed by construction traffic. There is only a short stretch of road west of Bradwell garage where no such alternative route is available. I consider that the risk of significant or prolonged obstruction there is slight.
97. Studies carried out by the Appellant indicate that some street furniture would require temporary removal to facilitate the passage of abnormal loads and that other temporary upgrading works would be required at the Latchingdon Road and Maldon Road junctions. These mainly involve verge strengthening within the boundaries of the public highway. However third party land at the latter junction (adjacent to Bradwell garage) might be needed by agreement in order to allow the passage of the largest 42m turbine blades if these were selected in preference to a smaller 33.3m blade. It appeared from my site inspection that the passage of a 42m blade would also require works to lop the lower boughs of a tree at this junction which is the subject of a Tree Preservation Order.

That would not warrant the dismissal of the appeal and I consider that these studies adequately demonstrate the feasibility of providing access to the appeal site.

98. I acknowledge that heavy goods vehicles travelling to and from the power station are unlikely to use a short stretch of the access route road east of Bradwell garage at present and that some large agricultural vehicles also avoid this section of road. Consequently the proportionate increase in heavy goods vehicle movements during construction of the wind farm will be greater than elsewhere on the route. However that does not demonstrate that this section of road is inherently unsuitable. Whilst there is a group of houses close to this section of road this is not the only part of the route or the only rural road where that occurs. A condition agreed by the Appellant and the Council provides for a Traffic Management Plan to manage traffic movements associated with the construction of the development and any replacement of the equipment.
99. The Appellant and the landowners have submitted a unilateral undertaking under Section 106 of the Act which provides for before and after surveys of the highway and for the developer to meet any reinstatement costs.

Conclusions

100. I agree with the Highway Authority that the road network is capable of accommodating the extra traffic without undue risk to the safety of other drivers or pedestrians along the access route. There would be no conflict with LP Policy PU6 in that regard.

g) Benefits

101. As to the benefits, the development would facilitate the delivery of the Government's commitments on both climate change and renewable energy as set out in PPS22 and elsewhere. The benefits in reducing carbon emissions as a result of this and similar developments elsewhere would include a reduced potential harm from climate change to the landscape, cultural heritage and ecology. Notwithstanding the discontinuous nature of energy generation from wind, the energy produced by this and other wind farms would also contribute individually and cumulatively to the nation's energy needs and would reduce reliance on diminishing supplies of fossil fuel. The development would reduce the likely shortfall in provision towards EEP regional energy targets for renewable energy production. It would contribute to the large number of wind turbines likely to be needed to meet those targets in the longer term. It is immaterial in these regards that a new nuclear power station is likely to be developed nearby or that the wind farm would generate much less energy than that power station. Both would contribute to non-carbon energy production and both forms of power generation are likely to be needed to meet national targets for energy production and to replace lost production capacity elsewhere, as indicated by the draft National Policy Statement for Energy (EN-1).

Other Matters

102. I have had regard to all other matters raised at the Inquiry and in written representations but they do not outweigh my conclusions on the main issues.

In particular I acknowledge that those living along the access route would experience noise and disturbance from additional traffic and large vehicles during the construction and decommissioning phases. However these would be temporary phenomena associated with many forms of development and are not determinative in the public interest which requires that development be able to proceed. A condition can require the management of construction noise from within the construction site.

Conditions and Obligations

103. The attached schedule of conditions is based upon draft planning conditions that were submitted to the Inquiry by the parties and which were subject to discussion or written comment. The reason for each condition is included on the schedule. I have made minor wording amendments to improve the clarity of conditions.
104. I refer above to my conclusions in respect of the enforceability of noise conditions and to the reason why I have not included a condition suggested by BATTLE in respect of amplitude modulation.
105. Unilateral planning obligations have also been submitted by the Appellant under Section 106 of the Act in relation to a noise management scheme, highways reinstatement and any interference with TV reception. Apart from the noise scheme which I address above, these were agreed by the Council to suitably address the relevant concerns. I agree.
106. Where I have not included other requested conditions this is because I do not consider that they satisfy one or more of the tests for conditions set out in Circular 11/95 which require that they be necessary, relevant to planning, relevant to the development to be permitted, enforceable, precise and reasonable in all other respects.

Overall Conclusions

107. EEP Policy ENG2 supports renewable energy and sets targets for renewable energy provision, towards which this proposal would contribute. The supporting text to LP Policy PU6 also seeks to encourage renewable energy development. However I have identified conflict with some criteria of LP Policy PU6 and with the objectives of other development plan policies for the protection of the coast and countryside. Neither PU6 nor the other policies include explicit provision for balancing any of the identified harmful effects of renewable energy facilities with the environmental and other benefits of renewable energy production. However these conflicting development plan objectives themselves require a balancing exercise. National policy also requires a balancing exercise between harm and benefits and is another important material consideration that can outweigh the development plan where there is conflict.
108. The wind farm has been designed and would be located to minimise its adverse environmental impact. These include its location: where there are no nationally designated landscapes; at a sufficient distance from residential property; and by modifying the original proposal to provide an adequate buffer between the turbines and the designated nature conservation areas to the east. It would not be likely on the evidence before me to have a significant

adverse effect on ecology or aviation interests. Many of the other impacts are capable of mitigation by the application of planning conditions or the operation of planning obligations.

109. However I have concluded above that there would be some harm to the public interest locally, particularly in respect of a change in landscape character, an associated adverse visual impact for many, but not all, viewers in their appreciation of the landscape, and an adverse impact on some aspects of the setting of St Peter's Chapel which, in consequence would not be fully preserved, and would not be enhanced. These effects would diminish with distance. Also in respect of noise, immissions would at times noticeably exceed the low background noise levels currently experienced by some residents. However it remains probable that noise immissions there and generally would not exceed the limits that ETSU defines as allowing reasonable living conditions. If they did exceed such limits, operational noise reduction measures would remain available. It might take time to identify and control such noise, particularly if it occurs only in rare weather conditions and that could risk temporary harm to living conditions. There is also a slight risk that excess amplitude modulation might occur and affect a few people but that could be addressed using environmental legislation if it constitutes a statutory nuisance.
110. The identified harm would be mainly local in its impact and I do not doubt that it would be keenly felt by those affected. However the benefits would be of much wider application. If renewable energy is to achieve the goal of substantially reducing carbon emissions whilst maintaining energy supplies it will need to be supplied from many sources including on-shore and off-shore wind turbines. The Arup study illustrates the likely scale of provision needed in eastern England alone over the coming years whilst also highlighting the main constraints to provision. In that context a wind farm of this scale and output would be of significant benefit for its contribution to the provision of renewable energy in order to address regional and national targets for its provision. I conclude that the identified harm and associated conflict with the development plan is limited and would be here outweighed in the wider public interest by the benefits. These would also include the benefits that reducing climate change could have for the conservation of landscape, cultural heritage and natural habitats. For these reasons I conclude that the appeal should be allowed.

R P E Mellor

INSPECTOR

Schedule of Conditions

Scope and Duration

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

Reason: To comply with section 91 of the Town and Country Planning Act 1990 (as amended).

2. The date when electricity from the development is first exported to the local electricity grid network, hereafter known as the "operational date", shall be notified in writing to the Local Planning Authority within 28 days after its occurrence.

Reason: To establish the commencement date for the 25 year operational life of the wind farm.

3. This permission shall expire no later than 25 years from the operational date. Within 12 months of the expiration of the permission, all elements of the development at and above ground level shall be removed and the land restored, in accordance with the Decommissioning Method Statement required by Condition 19.

Reason: For the avoidance of doubt and to establish the duration of the planning permission and in the interests of safety and amenity once the plant is redundant.

4. If any wind turbine hereby permitted fails for a continuous period of 12 months to produce electricity for supply to the local electricity grid network, then, unless otherwise agreed in writing with the Local Planning Authority, that wind turbine and the ancillary equipment solely relating to that wind turbine shall be removed from the site and the land shall be reinstated within a period of 6 months from the end of the 12 month period in accordance with a scheme that shall have been submitted to and approved in writing by the Local Planning Authority prior to the commencement of the works. The scheme shall include management and timing of the works and a traffic management plan, and shall be implemented as approved.

Reason: To ensure removal of redundant equipment in the interests of amenity and protection of the local environment.

Design, Layout and Grid Connection

5. Notwithstanding the submitted illustrative Drawing REN/BRA/0040/A, no turbine foundations or turbines shall be erected until the technical specification, size, design, external appearance, surface finish and colour of the turbines and foundations, in addition to details of the design measures to withstand flooding (in relation to turbines and foundations), as set out in the planning application and assessed in the Environmental Statement have been submitted to and approved in writing by the Local Planning Authority. No name, sign, symbol or logo shall be displayed on any external surfaces of the turbines other than those to meet statutory health and safety requirements. Development shall be carried out only in accordance with the approved details

Reason: In the interests of visual amenity.

6. All wind turbine blades shall rotate in the same direction.

Reason: In the interests of visual amenity.

7. The turbines and access tracks shall be sited within 30 metres of the locations indicated on Drawing REN/BRA/0043/A submitted with the planning application in positions which shall first have been submitted to and approved in writing by the Local Planning Authority and which shall have regard to the results of the further archaeological investigation and ecological surveys required by other conditions of this permission. The distance between the centre lines of turbine towers shall at no time be less than three times the diameter of the rotors. No part of any turbine shall encroach beyond the red line site boundary as shown on Drawing REN/BRA/0039A.

Reason: To safeguard archaeological and ecological interests whilst maintaining the minimum space between turbines in accordance with the guidance in the Companion Guide to Planning Policy Statement 22.

8. No development other than the access works defined in Condition 18 shall take place until details of the materials to be used for the construction of the turbine and anemometry mast foundations, hardstandings and access tracks and the design, external appearance, materials, colours and surface finishes of all buildings and means of enclosure have been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out only in accordance with the approved details.

Reason: In the interest of visual amenity.

9. No development shall take place until details of the site compound, including its surfacing and drainage and any temporary structures to be erected, have been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details. The compound shall be removed and the land restored within a period of twelve months from the operational date in accordance with a scheme previously agreed in writing by the Local Planning Authority.

Reason: In the interest of visual amenity and to ensure the compound is removed once redundant.

10. No development shall take place until the method of connecting the installation to the local electricity grid network has been notified to the Local Planning Authority in writing. Details of the on-site substation and new tower, if required, as indicated on submitted Drawing REN/BRA/0042A and including the control building to be erected in the position shown on submitted Drawing REN/BRA/0043/A shall be submitted to and approved in writing by the Local Planning Authority and the development shall be carried out in accordance with the approved details. With the exception of the connections within the substation and between the substation and the 132kV line all cabling shall be laid underground.

Reason: In order to ensure a satisfactory appearance in the landscape.

11. The anemometry mast shown on submitted Drawing REN/BRA/0041/B shall not be installed before details of its colour and finish and the means of obtaining readings at 2 different heights have been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out only in accordance with the approved details.

Reason: In the interest of visual amenity.

12. The turbines, anemometry mast and substation shall not carry any form of external illumination except as may first be approved in writing by the Local Planning Authority.

Reason: In the interest of visual amenity.

Construction

13. No development shall take place until a Construction Method Statement has been submitted to and approved in writing by the Local Planning Authority. The statement shall include details of:
- i) a Site Environmental Management Plan to include details of measures to be taken during the construction period to protect wildlife, habitats and hydrology; an ecological survey; an investigation and monitoring scheme to oversee and direct construction works; and details of soil handling, storage and restoration;
 - ii) access to the site from the adjacent highway and parking arrangements for site personnel, contractors and visitors and arrangements for the delivery and removal of materials;
 - iii) arrangements for the loading, unloading and storage of plant and materials;
 - iv) measures to be taken to give advanced notification of road closures on the road network to the site;
 - v) the provision and use of wheel-washing facilities for construction traffic;
 - vi) measures to be taken to protect the users of Public Footpath 19 Bradwell-on-Sea during the construction of the development to include segregation, warning signs, waymarking and/or temporary diversion details; and
 - vii) a construction noise management plan;
 - viii) a programme to inform the Ministry of Defence, London Southend Airport and the Civil Aviation Authority of: the dates that construction starts and ends; the maximum height of construction equipment; and the latitude and longitude of every turbine as constructed.

The approved provisions of the Construction Method Statement shall be implemented and maintained for the duration of the construction works.

Reason: In the interests of highway and aviation safety, residential and visual amenity and protection of the environment.

14. Construction work shall only take place between the hours of 08:00 – 18:00 on Monday to Friday inclusive and 08:00 – 13:00 hours on Saturdays with no such construction work on a Sunday or a national or Bank Holiday. Outwith these hours, works at the site shall be limited to emergency works and dust suppression, unless otherwise approved in writing by the Local Planning Authority. The Local Planning Authority shall be informed in writing of emergency works within three working days of their occurrence.

Reason: To minimise disturbance to residents in the vicinity of the wind farm.

15. The delivery of any construction materials or equipment for the construction of the site, other than turbine blades, nacelles and towers, shall be restricted to the hours of 08:00 – 18:00 on Monday to Friday inclusive, 08:00 – 13:00 hours on Saturdays with no such deliveries on a Sunday or a national or Bank Holiday unless otherwise approved in writing by the Local Planning Authority having been given a minimum of two working days notice of the proposed delivery.

Reason: To minimise disturbance to residents in the vicinity of and on the route to the wind farm.

Flood Risk

16. The sub-station shall be constructed with a minimum finished floor level of 3.49m AOD in accordance with section 4.3 of the Flood Risk Assessment in Volume 2 of the Environmental Statement.

Reason: To reduce the risk of damage by flooding.

Archaeology

17. No development shall take place within the application site until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work, comprising a staged programme of archaeological mitigation which shall include, as necessary, provision for exploratory trenching, preservation in situ of archaeological remains and/or appropriate excavation and recording. This work shall be undertaken in accordance with a written scheme of investigation which has been submitted to and approved in writing by the local planning authority.

Reason: The site is of archaeological interest.

Access

18. (a) No works, other than any archaeological work required by Condition 17 and those in connection with the construction of the vehicular access from the public highway to the site, shall commence until that access has been provided in accordance with a scheme that has first been submitted to and approved in writing by the Local Planning Authority. The scheme shall include details of: its width; surfacing; the positioning of gates and visibility splays and their subsequent treatment post-construction; and a programme for implementation. The scheme shall be implemented and maintained in accordance with the approved details.

(b) Within 6 months of the operational date a scheme for landscaping at the Maldon Road entrance and the area around the control building/sub station site, including a programme for its implementation, shall be submitted to and approved in writing by the Local Planning Authority. The approved landscaping scheme shall be implemented in accordance with the approved programme. If within a period of 5 years from the date of planting, any tree or plant is removed, uprooted, destroyed or dies, another of the same species and size shall be planted at the same place, unless the Local Planning Authority gives its written consent to any variation.

Reason: In the interests of highway safety and to protect the character and appearance of the area.

Decommissioning

19. At least 12 months preceding the date of expiry of this permission, a Decommissioning Method Statement shall be submitted to the Local Planning Authority, to include: a noise management plan; a traffic management plan for decommissioning; details of the restoration of the site, including measures to be taken to safeguard wildlife habitats; and a timetable for its implementation. The decommissioning of the development shall be implemented and maintained in accordance with the approved details.

Reason: To ensure the development is decommissioned in an acceptable manner in the interests of highway safety, nature conservation interests and visual amenity.

Shadow Flicker

20. No electricity shall be exported to the local grid until a written scheme has been submitted to and approved in writing by the Local Planning Authority setting out the protocol for the assessment of shadow flicker in the event of any complaint from the owner or occupier of any lawfully occupied dwelling which existed or had permission at the time of planning permission, including remedial measures. Operation of the turbines shall take place in accordance with the agreed protocol unless the Local Planning Authority gives its prior written consent to any variations.

Reason: In the interests of nearby residential amenity to restrict the impact of shadow flicker.

Traffic Management

21. No development shall take place until a Traffic Management Plan relating to the management of traffic movements associated with the construction of the development and any replacement of blades, nacelles or towers to and from the trunk road network (A12) (including off-site measures to accommodate very large vehicles) has been submitted to and approved in writing by the Local Planning Authority. The Traffic Management Plan shall include:-
- i) A comprehensive study of the proposed access route from the A12 Trunk Road to the application site to identify locations where highway works will be required or where highway infrastructure/street furniture will require temporary removal or replacement with removable street furniture to facilitate passage by abnormal loads.
 - ii) Provision for a trial run of the design vehicle to the application site using the access route, which shall be notified to the Local Planning Authority 14 days prior to the trial run. If, as a result of the trial run, further highway works are identified these must be reported to the Local Planning Authority and agreed measures must be carried out prior to the first delivery of any component by the design vehicle.
 - iii) Details of the measures to be taken to manage and control construction traffic on the proposed construction route and site access to include construction traffic routes and signage, abnormal load traffic management, warning signage, diversion routes and signage and proposals for temporary speed limits/ traffic regulation orders. The details shall also include measures to reinstate signs, verges and lamp standards and any other items displaced from the highway and a programme for their reinstatement.

- iv) Following completion of the development and the requirement for the highway works referred to above the reinstatement of the highway in a manner and in accordance with a timetable to be agreed by the Local Planning Authority.

The development shall be carried out in accordance with the approved Traffic Management Plan.

Reason: In order to ensure adequate traffic management in the interests of other road users and pedestrians.

Ecology

22. The development hereby permitted shall not commence until a specification for protected species surveys for badgers, bats and water voles to be carried out has been submitted to and approved in writing by the Local Planning Authority. The survey results and a programme of mitigation work to address significant issues identified by the surveys shall be submitted to and approved in writing by the Local Planning Authority. The surveys will be undertaken by a suitably qualified ecologist in the last suitable season prior to site preparation and construction work commencing, and the approved programme of mitigation work shall be implemented in full.

Reason: For the protection of nature conservation interests.

23. No development shall take place until a written Habitat Management Scheme to include a programme of works providing for the enhancement of existing hedgerows and the establishment of grassland strips along field margins and between site tracks and field margins to be seeded with a species-rich plant mix has been submitted to and approved in writing by the Local Planning Authority. Development shall be carried out in accordance with the approved details and programme.

Reason: For the protection of nature conservation interests.

Noise

24. The rating level (as defined in the Glossary of PPG24: 'Planning and Noise') of noise immissions resulting from the combined effects of the wind turbines (including the application of any tonal penalty) when determined in accordance with the attached Guidance Notes shall not exceed the values set out in Tables 1 and 2 below and:
- i) No electricity shall be exported to the local grid network until the wind farm operator has submitted to the Local Planning Authority for written approval a list of proposed independent consultants who may undertake compliance measurements in accordance with this condition. Amendments to the list of approved consultants shall be made only with the prior written approval of the Local Planning Authority.
 - ii) Within 21 days from receipt of a written request of the Local Planning Authority following a complaint to it alleging noise disturbance at a dwelling which lawfully exists or has planning permission at the date of this consent, the wind farm operator shall at its expense employ an independent consultant approved by the Local Planning Authority to assess the rating level of noise immissions from the wind farm in accordance with the procedures described in the attached Guidance Notes. The written request from the Local Planning Authority shall include a statement as to whether, in the opinion of the Local Planning Authority, the noise giving rise to the complaint contains or is likely to contain a tonal component.

- iii) Where a dwelling to which a complaint is related is not listed in the Tables attached to these conditions, the wind farm operator shall submit to the Local Planning Authority for written approval proposed noise limits from those listed in the Tables to be adopted at the complainant's dwelling for compliance checking purposes. The proposed noise limits are to be those limits selected from the Tables specified for a listed location which the independent consultant considers as being likely to experience the most similar background noise environment to that experienced at the complainant's dwelling. The submission of the proposed noise limits to the Local Planning Authority shall include a written justification of the choice of the representative background noise environment provided by the Independent Consultant. The representative background noise environment and proposed noise limits shall be approved in writing by the Local Planning Authority. The rating level of noise immissions resulting from the combined effects of the wind turbines when determined in accordance with the attached Guidance Notes shall not exceed the noise limits approved in writing by the Local Planning Authority for the complainant's dwelling.
 - iv) Prior to the commencement of any measurements to be undertaken in accordance with these conditions, the wind farm operator shall submit to the Local Planning Authority for written approval the proposed measurement location identified in accordance with the Guidance Notes where measurements for compliance checking purposes shall be undertaken. Measurements to assess compliance with the noise limits set out in Tables 1 and 2 attached to these conditions or approved by the Local Planning Authority pursuant to paragraph (iii) of this condition shall be undertaken at the measurement location approved in writing by the Local Planning Authority.
 - v) The wind farm operator shall provide to the Local Planning Authority the independent consultant's assessment of the rating level of noise immissions undertaken in accordance with the Guidance Notes and paragraph (ii) above within 3 months of the date of the written request of the Local Planning Authority unless otherwise extended in writing by the Local Planning Authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements and certificates of verification and calibration of the instrumentation used to undertake the compliance measurements as required by paragraph 1(b) of the attached Guidance Notes.
 - vi) The wind farm operator shall continuously log wind speed, wind direction and rainfall at the permanent meteorological monitoring mast erected in accordance with this consent and shall continuously log power production, nacelle windspeed, nacelle wind direction and nacelle orientation at each wind turbine all in accordance with paragraph 1(e) of the attached Guidance Notes. These data shall be retained for the life of the planning permission. The wind farm operator shall provide this information in the format set out in paragraph 1(f) of the attached Guidance Notes to the Local Planning Authority on its request within 14 days of receipt in writing of a request. The recording of wind speed and direction at the meteorological monitoring mast shall be at 2 heights which shall first have been approved by the local planning authority in writing such that wind shear data can be accurately calculated.
 - vii) Where a further assessment of the rating level of noise immissions from the wind farm is required pursuant to paragraph 4(c) of the attached Guidance Notes, the wind farm operator shall submit a copy of the further assessment within 42 days unless otherwise extended in writing by the LPA.
- Reason: To protect the living conditions of local residents.

Table 1 - Between 23:00 and 07:00 hours (Noise Level in dB L_{A90}, 10min)

Location (easting, northing grid coordinates)	Wind Speed (m/s) at 10m height within the site averaged over 10 minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
	L _{A90} Decibel Levels											
Eastlands (602355, 207572)	43	43	43	43	43	43	45	49	51	52	52	52
Hockflete (601394, 206683)	45	45	45	45	45	45	45	45	48	49	49	49
Delameres Farm (600038, 206327)	43	43	43	43	43	43	45	46	46	46	46	46
Packards (600250, 204950)	43	43	43	43	43	43	43	43	46	50	50	50
Dots and Melons (600657, 204448)	43	43	43	43	43	43	43	46	48	48	48	48
Marsh House (601485, 203597)	43	43	43	43	43	43	43	45	49	52	52	52
Howe Farm (601574, 202603)	43	43	43	43	43	43	43	43	46	49	49	49
Sandbeach (602369, 205341)	43	43	43	43	43	43	45	48	51	52	52	52
Linnet's Cottage (603151, 208057)	43	43	43	43	43	43	45	49	51	52	52	52
Munkins Farm (602046, 207339)	43	43	43	43	43	43	45	49	51	52	52	52
Bacons Chase (600866, 206664)	43	43	43	43	43	43	43	45	48	49	49	49
Fairview (601304, 206807)	43	43	43	43	43	43	43	45	48	49	49	49

Table 2 - At all other times (Noise Level in dB L_{A90}, 10min)

Location (easting, northing grid coordinates)	Wind Speed (m/s) at 10m height within the site averaged over 10 minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
	L _{A90} Decibel Levels											
Eastlands (602355, 207572)	40	40	40	40	40	41	45	48	51	53	54	54
Hockflete (601394, 206683)	45	45	45	45	45	45	45	45	47	49	51	52
Delameres Farm (600038, 206327)	40	40	40	40	42	45	47	50	53	55	56	57
Packards (600250, 204950)	40	40	40	40	40	40	40	42	44	46	48	49
Dots and Melons (600657, 204448)	40	40	40	40	40	41	44	47	50	52	54	55
Marsh House (601485, 203597)	40	40	40	40	40	40	41	44	47	49	50	50
Howe Farm (601574, 202603)	40	40	40	40	40	40	40	42	45	47	48	48
Sandbeach (602369, 205341)	40	40	40	40	40	41	44	48	51	54	56	57
Linnet's Cottage (603151, 208057)	40	40	40	40	40	41	45	48	51	53	54	54
Munkins Farm (602046, 207339)	40	40	40	40	40	41	45	48	51	53	54	54
Bacons Chase (600866, 206664)	40	40	40	40	40	40	41	44	47	49	51	52
Fairview (601304, 206807)	40	40	40	40	40	40	41	44	47	49	51	52

Note to Tables 1 and 2: The geographical co-ordinates references are provided for the purpose of identifying the general location of dwellings to which a given set of noise limits applies. The wind speed at 10 metre height within

the site refers to the wind speed measured at 10 metre height at the permanent meteorological monitoring mast erected in accordance with the planning permission on the wind farm site.

SCHEDULE OF GUIDANCE NOTES RELATING TO CONDITION 24

These notes are to be read with Condition 24. They further explain these conditions and specify the methods to be deployed in the assessment of complaints about noise immissions from the wind farm.

NOTE 1

- (a) Values of the $L_{A90,10min}$ noise statistic shall be measured at the approved measurement location using a sound level meter of BS EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 standard (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using a fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). The sound level meter shall be calibrated in accordance with the procedure set out in Note 1(b).
- (b) The entire sensitivity of the acoustical and electrical systems which make up the sound level meter shall be checked during a compliance measurement survey which shall be accomplished by applying an acoustic calibrator conforming to BS EN 60942 (or the equivalent UK adopted standard in force at the time of the measurements) to the microphone to check the sensitivity of the sound level meter system before and after the period of measurements. The difference in the noted sensitivities of the measurement system shall be recorded and the difference shall not exceed 1 dB during the compliance measurement survey period. The performance of the sound level meter shall have been verified to ensure it is operating in accordance with BS EN 60651/BS EN 60804 Type 1, or BS EN 61672-1 Class 1 standard (or the equivalent UK adopted standard in force at the time of the measurements) within the preceding 24 months prior to any periods during which data is obtained. The performance of the acoustic calibrator used to check the sensitivity of the acoustical and electrical systems which make up the sound level meter shall have been verified to ensure it is operating in accordance with BS EN 60942 (or the equivalent UK adopted standard in force at the time of the measurements) within the preceding 12 months prior to any periods during which data is obtained. Verification of the sound level meter and the acoustic calibrator shall be undertaken by a calibration laboratory which is accredited by the United Kingdom Accreditation Service to undertake such testing to ensure the verification results are traceable to national standards for sound in air defined by the National Physical Laboratory
- (c) The microphone shall be ½" in diameter and shall be mounted at 1.2 - 1.5 metres above ground level, fitted with a two layer windshield or suitable equivalent. The two layer windshield or suitable equivalent shall be approved in writing by the Local Planning Authority prior to the commencement of measurements. The microphone shall be fitted with the approved windshield and shall be placed outside the complainant's dwelling and be not more than 35 metres from it. The microphone shall be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground. In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, the wind farm operator shall submit for the written approval of the Local Planning Authority details of the proposed alternative representative measurement location prior to the commencement of measurements. The measurements shall be undertaken at the approved alternative representative measurement location.
- (d) The $L_{A90,10min}$ measurements shall be synchronised with measurements of the 10-minute wind speed, wind direction, rainfall and power generation data from the turbine control systems of the wind farm.
- (e) To enable compliance with the noise condition to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed in metres per second (ms^{-1}), arithmetic mean wind direction in degrees from north and rainfall data in each successive 10-minute periods by direct

measurement of 10 metre height wind speeds and direct measurement of hub height wind direction and direct measurement of rainfall at the permanent meteorological monitoring mast erected in accordance with the planning permission on the wind farm site. The wind farm operator shall continuously log arithmetic mean nacelle anemometer wind speed, arithmetic mean nacelle orientation, arithmetic mean wind direction as measured at the nacelle and arithmetic mean power generated during each successive 10-minute periods for each wind turbine on the wind farm. The rainfall detection system to be installed at the permanent meteorological mast erected in accordance with the planning permission on the wind farm site shall be approved by the Local Planning Authority prior to the first export of electricity from the development to the local electricity distribution network. All 10-minute periods shall commence on the hour and in 10 minute increments thereafter synchronised with Greenwich Mean Time.

- (f) Data provided to the Local Planning Authority in accordance with paragraph (v), (vi) and (vii) of the noise condition shall be provided in comma separated values in electronic format.

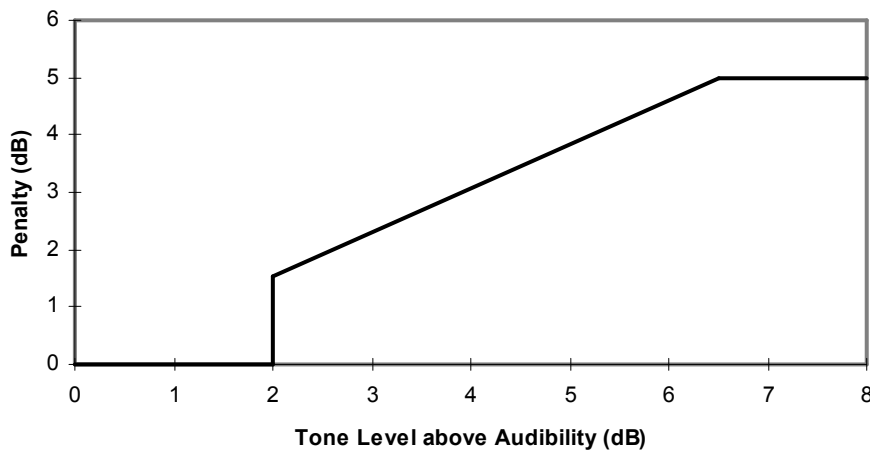
NOTE 2

- (a) The noise measurements shall be made so as to provide not less than 20 valid data points as defined in Note 2 paragraph (b).
- (b) Valid data points are those measured during the conditions specified by the Local Planning Authority in its written request but excluding any periods of rainfall measured at the permanent meteorological mast erected in accordance with the planning permission on the wind farm site. These specified conditions shall include the range of wind speeds, wind directions, times of day and power generation. In specifying such conditions the Local Planning Authority shall have regard to those conditions which prevailed during times when the complainant alleges there was disturbance due to noise.
- (c) A least squares “best fit” polynomial curve of an order deemed appropriate by the independent consultant shall be fitted to the data points and used to define the wind farm noise level at each integer wind speed.

NOTE 3

- (a) Where, in the opinion of the Local Planning Authority as advised to the wind farm operator in its written request under paragraph (B) of the noise condition, wind farm noise immissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component a tonal penalty shall be calculated and applied using the following rating procedure.
- (b) For each 10-minute interval for which $L_{A90,10min}$ data have been obtained as provided for in Note 1 a tonal assessment shall be performed on noise immissions during 2-minutes of each 10-minute period. The 2-minute periods shall be regularly spaced at 10-minute intervals provided that uninterrupted clean data are available (“the standard procedure”). Where clean data are not available, the first available uninterrupted clean 2-minute period out of the affected overall 10-minute period shall be selected. Any such deviations from the standard procedure shall be reported.
- (c) For each of the 2-minute samples the tone level above audibility (L_{ta}) shall be calculated in accordance with Note 5..
- (d) The tone level above audibility (L_{ta}) shall be plotted against 10 metre height wind speed for each of the 2-minute samples. For samples for which the tone level was below the audibility criterion or no tone was identified, a value of zero audibility shall be substituted.
- (e) A least squares “best fit” linear regression shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the “best fit” line. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used.

- (f) The tonal penalty shall be derived from the average tone level above audibility of the tone according to the figure below.



NOTE 4

- (a) If a tonal penalty is to be applied in accordance with Note 3(a) the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Note 2 and the penalty for tonal noise as derived in accordance with Note 3(f) above.
- (b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Note 2.
- (c) In the event that the rating level of noise at the dwelling to which a complaint relates is higher at any wind speed than the limit(s) set out in the Tables attached to the conditions or the noise limits for a complainant's dwelling approved in accordance with paragraph (iii) of the noise condition, the independent consultant shall undertake a further assessment of the rating level to correct for background noise. The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment shall be undertaken in accordance with the following steps:

- (i) Repeating the steps in Note 2, with the wind farm switched off, and determining the background noise (L_3) at the assessed wind speed.
- (ii) The wind farm noise (L_1) at this speed shall then be calculated as follows where L_2 is the measured level with turbines running but without the addition of any tonal penalty:

$$L_1 = 10 \log \left[10^{L_2/10} - 10^{L_3/10} \right]$$

- (iii) The rating level shall be re-calculated by adding the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise L_1 at that wind speed.
- (iv) If the rating level lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Local Planning Authority for a complainant's dwelling in accordance with paragraph (iii) of the noise condition then no further action is necessary. If the rating level exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Local Planning Authority for a complainant's dwelling in accordance with paragraph (iii) of the noise condition then the development fails to comply with the conditions.

NOTE 5**Tonal Assessment Method**

This method is based on that defined in pages 104 to 109 inclusive of ETSU-R-97. The method is to be used to assess the audibility of a tone as perceived by the average listener and to derive the tone level above audibility. There are three main steps in the procedure:

- A) Frequency analysis of the noise at receiver locations.
- B) Determination of the sound pressure level of the tone(s) and the sound pressure level of the masking noise within the critical band.
- C) Evaluation of the difference between the tone and the masking noise sound pressure levels by comparison with a criterion curve to determine the audibility of a tone and give a value for the tone level above audibility.

The analysis shall be performed on an 'A' weighted audio recording of two minutes' duration. A two minute, RMS-averaged FFT is calculated from the sampled data using a Hanning time-window with a frequency resolution of 3.0 ± 0.5 Hz and an analysis bandwidth of 2 kHz. Multiple short-term RMS-averaged FFT spectra within the sampled data are also calculated using the same parameters as described for the two minute, RMS averaged spectrum. This should result in an averaging time of 0.29 to 0.4 seconds for each individual short-term spectra.

The single averaged FFT spectrum and the multiple short-term FFT spectra shall then be used to assess the audibility of any tones present within the audio recording. The two minute averaged FFT shall be inspected for peaks within the spectrum to identify possible tones. The maximum value of the peaks shall be compared to the logarithmic average of the sound pressure levels of the rest of the lines within a band of frequencies centred on the peak, termed the 'critical band'. The width of the critical band is 100 Hz for tone frequencies from 20 Hz to 500 Hz and 20% of the tone frequency for frequencies above 500 Hz.

If a single tone is present the critical band is centred upon the tone. If two or more closely spaced tones are present the critical band is placed so that it contains the maximum possible amount of tonal energy. In order to do this it is first necessary to identify the tones within the spectrum. Each FFT spectral line in the two minute spectra must be classified according to the following criteria: a peak is classed as a tone if its level is more than 6 dB above the logarithmic mean average of the sound pressure levels of the rest of the lines in the critical band centred on the peak, but excluding the one line each side of the peak. If the peak qualifies as tone the adjacent lines are also classified as a tone if their level is within 10 dB of the peak and greater than 6 dB above the average level previously calculated. If a spectral line is more than 6 dB above the average masking level and more than 10 dB below the peak level it is classified as neither tone nor masking. Having identified the tones the critical band can be placed to maximise the sound pressure level of the tones within the critical band.

Because classifying a line as a tone means it can no longer be counted as masking, an iterative procedure is required for the proper identification of tones and masking:-

- **Find peaks in the spectrum** - calculate the average energy in the critical band centred on each peak, not including the two lines adjacent to the peak. If the peak is more than 6 dB above the average masking level then it is a tone. Then classify adjacent spectral lines.
- **Classify adjacent spectral lines** - compare spectral lines at frequencies above and below the peak to the average level. If a line is more than 6 dB above the average and less than 10 dB below the peak then it is a tone. If a spectral line is more than 6 dB above the average masking level and more than 10 dB below the peak level then it is classified as neither tone nor masking, and not included in the calculation for either level. Calculate the new average masking level centred around the peak, discounting adjacent spectral lines and all other lines classed as tones. Repeat this step as necessary until no more lines are reclassified.

The process described above is repeated for every critical band centred around tonal peaks in the spectrum. The result is that within each critical band every spectral line is classified as tone energy, masking energy or neither. Having identified the lines in each spectrum contributing to tonal levels, masking levels or neither, the tonal analysis can continue as follows:

The masking energy within the critical band is calculated from the two minute RMS spectrum. Calculate the masking level in the critical band (L_{pm}) correcting for a reduction in the number of lines due to the exclusion of tones and correcting for the Hanning window:

$$L_{pm} = 10\log_{10} \sum 10^{\frac{L_m}{10}} + 10\log_{10} \left[\frac{(\text{critical band width})}{(N_m \times \Delta f)} \right] + 10\log_{10} \left(\frac{1}{1.5} \right)$$

Where: L_m = sound pressure level of each line containing masking noise
 N_m = number of lines within the critical band containing masking noise
 Δf = the frequency resolution of the FFT spectrum.

For each of the short term spectra of 0.29 to 0.4 seconds duration, calculate the tone energy within each critical band (L_{pt}') using the lines identified as tones from the 2-minute spectrum.

$$L_{pt}' = 10\log_{10} \sum 10^{\frac{L_t}{10}}$$

Where: L_t = sound pressure level of each line containing tonal noise.

The tone level used in the assessment (L_{pt}) is the arithmetic mean of the top 10% of tone levels (L_{pt}') from all the short-term spectra constituting the 2 minutes of data. The audibility of a tone is dependent upon the tone level difference (ΔL_{tm}) and the frequency of the tone:

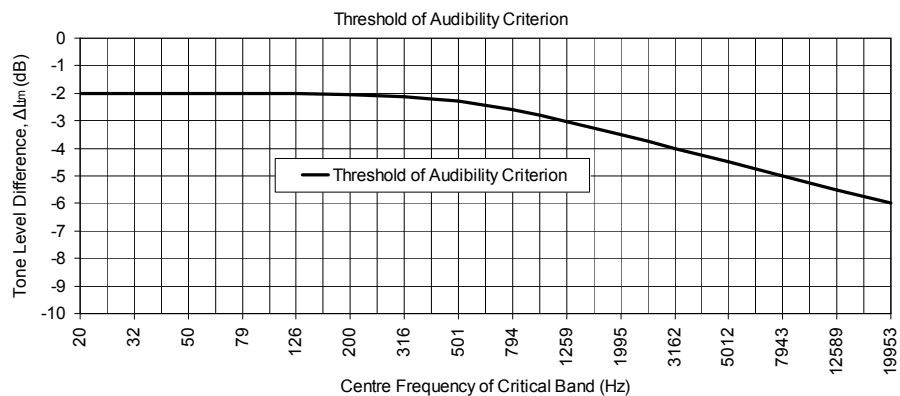
$$\Delta L_{tm} = L_{pt} - L_{pm}$$

The audibility criterion is defined as follows:

$$\Delta L_{tm,crit} = -2 - \text{Log}_{10} \left(1 + (f/502)^{2.5} \right)$$

Where: f = frequency at the centre of the critical band.

This is the level at which the average listener will be just able to hear the tone. The figure below details the audibility criterion based upon the above equation. It can be seen from the figure that the audibility criterion is related to the frequency of the tone.



The tone level above audibility (L_{ta}) can then be calculated by:

$$L_{ta} = \Delta L_{tm} - \Delta L_{tm,crit}$$

Values of the tone level above audibility (L_{ta}) shall be calculated for each of the valid data periods and for each of the tones present within the spectrum. The highest value for the tone level above audibility for the most audible tone shall be used to calculate the penalty to be applied as set out in Note 3 above.

APPEARANCES

FOR THE LOCAL PLANNING AUTHORITY:

Mr S Randle	of Counsel
He called	
Mr C Tokley DipEP MRTPI	Planning Consultant
Ms Bolger	Landscape Architect
Mr J Neale MA IHBC	English Heritage
Mr R Davis BSc(Eng) MIOA	Acoustics Consultant of Robert Davis Associates
Mr Taylor	Technical Services Manager, London Southend Airport
Mr T Clark	Air Traffic Services Manager, London Southend Airport
Mr Welch	Managing Director - London Southend Airport
Mr Kirkland	Aviation Consultant of NATS

FOR THE APPELLANT:

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FOR BATTLE :

Miss Tina Douglass	of Counsel instructed by Ms Susan Ring of Richard Buxton, Solicitors
She called	
Dr J Constable	Director of Policy and Research - Renewable Energy Foundation
Mr N Yates	Tillingham resident and representative of BATTLE
Mr d'Arcy Serrell-Watts	Bradwell resident
Mr T Oliver MA DipLA	Formerly Head of Rural Policy CPRE
Mr J Lee	Bradwell resident and former caravan park proprietor
Mrs J Davis RN RM RHV MA	Resident of Deeping St Nicholas, Lincolnshire
Mr M Stigwood	Acoustics consultant
Dr L Hoare PhD	Director of Planning - Renewable Energy Foundation
Mr G Billington MIEEM	Ecology consultant specialising in bats
Ms J Payton	Bradwell Resident
Mr D Kent	Bradwell Resident

INTERESTED PERSONS:

Mrs Witney	Mersea Resident and Coordinator of Colchester and NE Essex Friends of the Earth
Ms Mainwood	Wivenhoe resident and spokeswoman for BRARE (Bradwell for Renewable Energy)

Mrs Mullins	Mersea resident
Mr J Harrison CEng CMAREng, BTech, MIMarEST, MIDGTE	Essex resident with interest in energy generation
Mr Bailey	Tillingham resident and farmer
Mrs Cole	Tillingham resident and sheepdog trainer
Mr Mee	Tillingham resident and Parish Councillor

DOCUMENTS SUBMITTED DURING THE INQUIRY

MALDON DISTRICT COUNCIL

MDC9	Written Opening Statement
MDC10	Written Closing Statement
MDC11	Davis Draft Noise Conditions and Commentary 16 November
MDC12	Davis Noise Procedure
MDC13	Tokley View on Enforceability of Noise Conditions
MDC14	Copy of email from MDC to BATTLE dated 30 November 2009 with reference to planning conditions and BAT/19 document.
MDC15	Email of 21 December 2009 confirming that noise conditions are not agreed

NPOWER RENEWABLES LTD

NRL1	Extract from Bolger Proof for South Norfolk Inquiry
NRL2	OS 1:50,000 Colchester
NRL3	OS 1:25,000 Blackwater Estuary (+ site visit notations added by BATTLE)
NRL4	Extract from LizLake Landscape Proof to 2007 Inquiry
NRL5	Email chain between NRL and London Southend Airport
NRL6	Draft National Policy Statement for Nuclear Power Generation (EN-6)
NRL7	Draft National Policy Statement for Energy (EN-1)
NRL8	Draft National Policy Statement for Renewable Energy Infrastructure (EN-3)
NRL9	Consolidated revised draft conditions
NRL10	Comments on Stigwood Draft Conditions
NRL11	Written note of changes Stigwood 11/1 and Davis 11/2
NRL12	Tracked changes incorporating Stigwood comments and Davis comments
NRL13	Revised Noise S106 Unilateral Undertaking submitted on Day 12
NRL14	Written Opening Statement
NRL15	Natural England Letter of 30 October 2009
NRL16	Written Closing Statement
NRL17	S106 Obligations 17/1 Television; 17/2 Highways; 17/3 Noise Unilateral; 17/4 Noise Agreement
NRL18	Email correspondence dated 26 November 2009 with attached draft Version 3 planning conditions
NRL19	Email correspondence dated 27 November 2009 with attached planning conditions reference 3598770_1.DOC

BATTLE

BAT/1/1	The UK Renewable Energy Strategy 2009 p72
BAT/3/8	Bradwell Lodge, Print and Script by W Angus Sculp
BAT/4/7	CPRE email confirming up to date map used in evidence (Oliver)
BAT/6/5a	Draft Noise Condition for Amplitude Modulation (Stigwood)
BAT/6/5b	Rationale to AM condition (Stigwood)
BAT/6/6a	Draft general noise condition (Stigwood)
BAT/6/6b	Rationale for general noise condition (Stigwood)
BAT/6/7	Comparison of predicted LAeq wind turbine noise measurements undertaken by MAS Environmental Document date 12 November 2009 (Stigwood)
BAT/6/8	Proposed conditions following MDC advice 11 November (Stigwood)
BAT/6/9	Document on MDC conditions received on 17 November (Stigwood)
BAT/11/4	Little Blakenham Pit

- BAT/11/5 Bat Migration Document
- BAT/12/11 Number10.gov.uk – Wind farm health petition response (Hoare)
- BAT/12/12 Euronoise 2009 Van den Berg Conference Paper 'Why is wind turbine noise noisier than other noise?' (Hoare)
- BAT/13 Report on Tranquillity Mapping Methodology (Oliver)
- BAT/14 Written Opening Statement
- BAT/15 Written Closing Statement
- BAT/16 Copies of emails to show when Stigwood comments sent to NRL
- BAT/17 Regina v Cornwall CC ex parte Hardy (2000)
- BAT/18 The Queen (Woolley) v Cheshire East BC and Millenium Estates (2009)
- BAT/19 BATTLE Comments on Version 3 Planning Conditions
- BAT/20 Letter from Richard Buxton of 30 November 2009 commenting on draft S106 Noise Undertaking
- BAT/21 Email from Richard Buxton dated 14 December 2009 (21/1) and attached summary of implications of omissions of recommendations from Hayes Mackenzie Partnership report to Department of Trade and Industry in 2006 (21/2)
- BAT/22 Email from Richard Buxton dated 21 December 2009 with comments on revised draft noise conditions and revised S106 undertakings.

CORE DOCUMENTS

- 5.3A Derbyshire Dales/Peak District NPA v SoSCLG and Carsington Wind Energy (2009)
- 5.31a Coronation Power SoS Decision (4 Appeals) (APP/P4225/A/08/2065277 &c)
- 5.31b Coronation Power Decision Inspector's Report Extracts
- 5.32 Enertrag (UK) Ltd v SoS for Communities and Local Government CO/1160/2008
- 5.33a Wadlow Farm Inspector's Report (APP/W0530/A/07/2059471)
- 5.33b Wadlow Farm Secretary of State's Decision (APP/W0530/A/07/2059471)
- 5.34 Nantglyn Decision Issued on 18 November 2009 (APP/R6830/A/08/2074921)
- 8.36 World Health Organisation Night Noise Guidelines

OTHER DOCUMENTS SUBMITTED DURING THE INQUIRY

- DOC1 Statement of Common Ground (MDC/NRL)
- DOC2 Statement of Common Ground (MDC/NRL) (Noise)
- DOC3 Draft noise conditions 11 November (MDC/NRL)
- DOC4 Draft Non-Noise Conditions 11 November (MDC/NRL)
- DOC5 Revised Version of Conditions (MDC/NRL)
- DOC6 Tree Preservation Order at Bradwell Garage
- DOC7 Harrison Statement
- DOC8 Witney Statement (6/1) and FoE pamphlet 'Renewable energy – Your questions Answered' (6/2)
- DOC9 Bailey Statement
- DOC10 Mee Letter, Statement and 4 Appendices (10/1-10/5)
- DOC11 Mainwood Statement
- DOC12 Cole Statement and Internet Extracts