Appeal Decision

Inquiry opened on 18 May
Site visit made on 2 June 2010

by Martin Pike **BA MA MRTPI**

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

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Decision date:
14 December 2010

Appeal Ref: APP/H0520/A/09/2119385
Land at Cotton Farm, Offord Road, Graveley, St Neots, Cambridgeshire

- 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 RWE Npower Renewables Limited against the decision of Huntingdonshire District Council.
- The application Ref: 0802296FUL, dated 23 July 2008, was refused by notice dated 17 November 2009.
- The development proposed is temporary planning permission for 25 years for a wind farm comprising 8 wind turbines, substation, anemometry mast, access tracks and ancillary infrastructure.

DECISION

1. I allow the appeal, and grant planning permission for 25 years for a wind farm comprising 8 wind turbines, substation, anemometry mast, access tracks and ancillary infrastructure on land at Cotton Farm, Offord Road, Graveley, St Neots in accordance with the terms of the application Ref: 0802296FUL, dated 23 July 2008, and the plans submitted therewith, subject to the conditions set out in the attached schedule.

PROCEDURAL MATTERS

2. The inquiry sat between 18 May and 1 June 2010. For part of the inquiry I was assisted by another Inspector, Zoe Hill BA(Hons) MRTPI DipBC IHBC; however, as the appointed Inspector, the decision on this case is mine alone.

3. I made accompanied visits to the site and the surrounding area on 2 June, and made unaccompanied visits to the surrounding area later that day and on other days. On 2 June the Rule 6 party, Cotton Farm Alliance (CFA), installed two blimps near the site which were intended to demonstrate the overall height of the proposed turbines and the hub height. Whilst I found these to be of some benefit in the assessment of long distance views, because they were not sited at any of the proposed turbine locations they were of limited value in the assessment of short distance views.

4. The planning application was accompanied by an Environmental Statement (ES) prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, as amended. The ES was independently reviewed by consultants appointed by Huntingdonshire District Council (HDC), who found that it was generally satisfactory and complete with only minor omissions and inadequacies; they

advised that it meets the requirements of the Regulations and provides a sound basis to assist decision making. HDC concluded that the ES is acceptable. Prior to the inquiry a number of relatively minor errors were discovered in the ES noise assessment and an amending document was issued.

5. I have considered the comments from consultees (including South Cambridgeshire District Council (SCDC)) and the representations made by CFA (and its predecessor, Cotton Farm Action Group) about the ES and the likely environmental effects of the proposed development. Concerns include the approach to consideration of the effects on a Scheduled Ancient Monument, the wider setting of listed buildings, and residential amenity. There is also criticism of the photomontages.

6. I consider that the shortcomings of the ES are minor and do not detract from its overall soundness. Moreover, I believe that the further environmental information submitted as part of the evidence base for the inquiry, and in the written and oral evidence, largely addresses the concerns of SCDC and CFA. Criticism of the photomontages is directed to the size of the images rather than their accuracy. Provided they are used correctly, I consider that these images provide a fair representation of the scale of the proposed development, notwithstanding their two-dimensional and static nature. Consequently I am satisfied that there is adequate environmental information to satisfy the Regulations and to enable a robust decision to be reached. In arriving at my decision I have taken all this environmental information into account.

7. Towards the end of the penultimate sitting day of the inquiry Cambridge Gliding Centre presented, for the first time, a technical objection to the wind farm on the grounds that it would create a potential hazard to safe aerial navigation. Whilst I overruled the appellant's objection to this late evidence and decided that it should be admitted, I also allowed the appellant time to respond to this new evidence, in writing, after the final sitting day. In addition, I allowed CFA to respond in writing to the statement produced by the appellant towards the end of the inquiry concerning excess amplitude modulation. For both matters, an exchange of correspondence took place in accordance with an agreed timetable. I have taken these written representations into account in reaching my decision.

8. On 6 July 2010 the Secretary of State used s79(6) of the Local Democracy Economic Development and Construction Act 2009 to revoke all regional strategies. From this date it was assumed that the East of England Plan, to which all parties made reference in evidence to the inquiry, no longer formed part of the development plan. Because this represented a material change in the policy framework against which the appeal proposal was assessed, I invited the parties to comment on the implications of the revocation. This resulted in a further round of written representations, after which I closed the inquiry in writing on 31 August 2010.

9. In its response to the request for comments on regional strategy revocation, CFA suggested that I study carefully a statement made by Lord Marland (Parliamentary Under-Secretary of State, Department of Energy and Climate Change (DECC)) in the House of Lords on 5 July 2010. Because Lord Marland subsequently issued a correction to this statement on 26 July, and to ensure that I was fully appraised of the Government's emerging policy with regard to

wind energy, I considered it necessary to conduct a further round of written representations. I have considered all the further comments received by the final response date of 15 October 2010.

10. This appeal decision was about to be issued when, on 10 November 2010, the High Court judgement was made in the case of *Cala Homes (South) Ltd v Secretary of State for Communities and Local Government and Winchester City Council* (CO/8474/2010). This found that the Secretary of State's decision to revoke regional strategies was unlawful. As a consequence, the East of England Plan has been re-established as part of the development plan. On the same day a Ministerial statement was issued which re-affirmed the Government's intention (announced in May 2010) to abolish regional strategies; the statement further advised that this intention was a material consideration to be taken into account in any decisions being taken.

11. Cala Homes (South) Ltd has commenced a second action against the Secretary of State on the grounds that the Ministerial statements are unlawful in their assertion that the intention to repeal regional strategies is a material consideration. An interim action which stayed the effect of the Ministerial statements was set aside by the Courts on 3 December 2010. The current position is that, until the outcome of the second *Cala Homes* action is known, the Department of Communities and Local Government is advising decision makers to consider whether the existence of this challenge, and the basis of it, affects the significance and weight which they judge may be given to the Secretary of State's statements.

12. The first *Cala Homes* judgment necessitated a further revision to this appeal decision. However, I did not consider that it was necessary to consult the parties yet again on these developments because the planning policy situation has reverted essentially to that which existed on 1 June 2010, the final sitting day of the inquiry. I have not been advised by any party that there has been a change since this date to the East of England Plan (insofar as relevant to the matters examined in this case).

MAIN ISSUES

13. There are four main issues in this appeal:
    (i) the effect of the proposed development on the setting of nearby heritage assets;
    (ii) the effect of the proposal on the landscape character and visual amenity of the surrounding area;
    (iii) the effect of the proposal on the living conditions of neighbouring occupiers;
    (iv) whether any harmful or adverse impacts arising from these issues would be outweighed by the benefits of providing renewable energy, having regard to national and local planning policy.

PLANNING POLICY

14. At present the development plan comprises the East of England Plan, the saved policies of the Huntingdonshire Local Plan 1995 (as amended by the

Huntingdonshire Local Plan Alteration 2002), the saved policies of the Cambridgeshire and Peterborough Structure Plan 2003, and the Huntingdonshire Local Development Framework Core Strategy 2009. There are no policies of the Structure Plan or the Local Plan Alteration which are relevant to this appeal.

15. The over-arching policy SS1 of the East of England Plan (EEP) aims to secure sustainable development through all the policies of the Plan. Policy ENG1 identifies the need to meet regional and national targets for reducing climate change emissions and urges local authorities to encourage the supply of energy from renewable sources. The regional targets are given in policy ENG2 – the aim is that 10% of the region's energy (excluding offshore wind) should come from renewable sources by 2010, increasing to 17% by 2020. Policy ENV6 requires planning authorities and other agencies to identify, protect, conserve and, where appropriate, enhance the buildings, places and landscapes which make up the historic environment of the region. In similar vein, policy ENV2 seeks the protection and enhancement of the diversity and local distinctiveness of the region's countryside character areas.

16. Huntingdonshire Local Plan (HLP) policy En2 indicates that any development involving or affecting a building of special architectural or historic merit is required to have proper regard to the scale, form, design and setting of that building. Policy En5 requires development within or directly affecting conservation areas to preserve or enhance their character or appearance, while policy En9 seeks to prevent development which would (among other matters) impair important views into and out of conservation areas. Policy En11 states that planning permission will normally be refused for development which would have an adverse effect on a Scheduled Ancient Monument. Under policy En17, development in the countryside is generally restricted to agriculture, mineral extraction, outdoor recreation and public utility services. Other policies aim to protect countryside features and wildlife, and seek development which respects established buildings in the locality and makes provision for landscaping.

17. Core Strategy (CS) policy CS1 requires all development proposals in Huntingdonshire to contribute to the pursuit of sustainable development. Among the criteria used to assess the achievement of this objective are "… maximising the opportunities for renewable and low carbon energy sources…", "minimising and reducing greenhouse gas emissions….", and "preserving and enhancing the diversity and distinctiveness of Huntingdonshire's towns, villages and landscapes including the conservation and management of buildings, sites and areas of architectural, historic or archaeological importance and their setting". The reasoned justification for the policy states that proposals for renewable energy provision will be encouraged in accordance with Planning Policy Statement (PPS) 1 supplement on climate change and will need to take into account the Council's Supplementary Planning Document (SPD) on wind power.

18. The Council's *Huntingdonshire Landscape and Townscape Assessment* SPD indicates that the appeal site is within the South East Claylands landscape character area. The *Wind Power* SPD states that the South East Claylands landscape has a high capacity to accommodate a small-scale group (comprising 2-12) of turbines and a moderate capacity to accommodate a medium-scale

group (13-25 turbines). For each scale of development the SPD identifies criteria which should be taken into account.

19. The CS is broadly consistent with Government policy in PPS1: *Delivering Sustainable Development* and its *Planning and Climate Change* (PCC) supplement. The HLP is somewhat dated and many of its policies do not fully reflect current national policy in PPS5: *Planning for the Historic Environment*, PPS7: *Sustainable Development in Rural Areas*, and PPS22: *Renewable Energy*. I focus on the relevant elements of national policy in the assessment below.

REASONS

HERITAGE ASSETS

Introduction

20. The appeal site comprises most of the former Graveley airfield, constructed by the Air Ministry in 1941 and used for the remaining years of World War II. By 1968, when the airfield was sold, most of the runways and World War II structures had been removed. The site is currently farmland, with the perimeter track and part of the runways being retained for access to the largely undivided arable field. The airfield destroyed the historic enclosure landscape that existed prior to 1941; consequently the development of 8 wind turbines (with a hub height of about 82m and a height to blade tip of 127m) and associated ancillary structures distributed across the site would not cause direct loss of, or alteration to, any designated heritage asset.

21. There is widespread concern about the effect of the development on a range of nearby heritage assets, including the setting of listed buildings (particularly the Grade II* Toseland Hall), a Scheduled Ancient Monument (SAM) and a registered park and garden, and on the character and appearance of conservation areas. I have a statutory duty under sections 16 and 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 to have special regard to the desirability of preserving the setting of listed buildings or any features of architectural or historic interest which they possess, and under section 72 to pay special attention to the desirability of preserving or enhancing the character or appearance of conservation areas.

22. PPS5, which has been issued since the Council's decision on this proposal, provides a definition of setting and states:
The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
At the inquiry the parties agreed that setting is a subjective matter. I do not seek to define precise physical boundaries to settings for any of the listed buildings or other heritage assets, rather my assessment is based upon the information before me in terms of evidential, historical, aesthetic and communal values[1] as well as the plans and the photomontages that have been produced and what I observed during my site visits.

[1] These reflect the heritage values set out in *Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment* – English Heritage (2008)

Listed buildings - Toseland Hall

23. The proposed turbines would be between 950m and 1,900m to the north and north-west of Toseland Hall, described in the listing as a "fine example of an early 17th century manor house". The Hall has a square plan with broadly symmetrical, multi-gabled façades and comprises two storeys with attics. It is of decorative character with a distinct vertical emphasis created by the raised plinth, the positioning and proportion of the fenestration and the roof design. The gable features of the roof create a visually active roof form which is augmented by the tall ornate chimneys. The Hall was built on the edge of the village of Toseland and, with no obviously subservient back elevation, was originally intended to be viewed from all sides. Within its curtilage to the north-west is a block of 17th century stables and to the south-west is a small 18th century granary.

Consideration of setting

24. Toseland Hall was built around 1600 for the Luke family; it was not their principal residence and its original purpose was the subject of debate at the inquiry. There is no primary evidence that it was built as a retreat for country pursuits and sports, as the Council contends, though it was clearly intended to be an imposing building demonstrative of its owners' wealth and social status. It may have had a role in local administrative matters and may have had links to both the nearby SAM in Toseland Wood and to the church. Even if it did not, it formed the centre of a sizeable farm linked to a substantial tithe barn (now demolished) within a farmstead and associated with adjoining agricultural land.

25. The historic maps and records produced at the inquiry provide no firm evidence that any formal or landscaped enclosures were once associated with Toseland Hall. The evidence of agricultural buildings close to the Hall, coupled with the extent of ridge and furrow in the surrounding area, suggest that even if the Hall was originally at the centre of a purposeful or designed setting, this was quickly superseded by the functional relationship with the surrounding farmland which endured until the late 20th century. An 1820 map reveals that part of the appeal site, including the proposed locations for some of the turbines, was at the northern edge of the landholding of the Leeds family that then owned Toseland Hall. It is not known whether this land was linked with the Hall at the time it was built. More recently, none of the appeal site has been associated with Toseland Hall – indeed, the current owners own little land beyond the immediate curtilage. Thus, the historical evidence of association between Toseland Hall and the appeal site is limited.

26. Both the 1951 list description and the more detailed 1926 report from the Royal Commission on Historic Monuments indicate that the significance of Toseland Hall lies primarily in its inherent fabric and architecture. In terms of its visible presence in the landscape there is little, if any, intervisibility at ground level between the appeal site and Toseland Hall as a result of intervening woodland and subtle differences in level. From the upper floors within the Hall (which is a private dwelling and not open to the public) views northwards towards the appeal site are restricted by trees and other vegetation in the rear garden. Although the aspect to the west is more open, internal views towards the appeal site are at a relatively acute angle.

27. Approaching along Toseland Road from the village to the east, the Hall is surprisingly well screened. Conversely, the open landscape to the west and south currently allows the building to be seen from a considerable distance. The house has a strong presence when approached from the south along the public footpath, appearing as a substantial structure of undeniably important form which draws attention towards it. Visibility from the west is only slightly less significant, though this is a relatively recent phenomenon, for the tithe barn and other agricultural buildings that have been removed within the last 100 years would previously have restricted westerly views of the Hall. Yet even today Toseland Hall's importance is mostly appreciated at close quarters and, beyond the immediate locality, it does not dominate the wider landscape.

28. Overall, the evidence suggests that the setting of Toseland Hall does not extend substantially beyond its immediate surroundings. The fact that, at some time in the past, part of the appeal site was owned and farmed by the owner of Toseland Hall is not sufficient, in my view, to determine that the site (or any part of it) is within its setting today. I conclude that the appeal site is not part of the surroundings in which Toseland Hall is experienced and that the proposed wind farm would be beyond the current setting of the Hall.

Effect of wind farm on setting

29. Because of their immense height and movement, and their proximity, certain turbines would be highly visible from within the current setting of Toseland Hall. Consequently the development would affect the setting of the Hall and the way in which it is experienced, thereby impacting on the significance of this highly important (grade II*) heritage asset. Of the four heritage values described in *Conservation Principles*, the impact of the wind farm would almost exclusively be limited to the aesthetic value. The development would have no material effect on the evidential or historical values of Toseland Hall and its communal value, to the limited extent that it exists, would not be diminished.

30. The greatest visual change caused by the wind farm would occur in views from public rights of way to the south. Mostly the turbines would be seen to the sides of Toseland Hall, though from the bridleway there may be fleeting glimpses of a turbine appearing above the Hall. Despite being much further away, the turbines would appear substantially taller than the Hall and their motion would be a significant distraction, drawing the eye from the listed building. On the other hand, the streamlined form, elongated shape and distinctly modern style of the turbines would contrast hugely with the solidity, compactness and manifestly historic nature of the Hall. Thus, coupled with a clear perception of the distance between the turbines and the Hall, the wind farm would be seen as a markedly different development not only in character, but also spatially and temporally. I consider that such differences would serve to limit the harm to the Hall's setting. Similar considerations apply in views from High Street in front of Toseland Hall, the point at which public appreciation of the heritage asset is best gained, though from here the Hall's height is such that the turbines would only be seen to its sides, not above it.

31. From the north there are no long distance views which would include both the wind farm and the Hall. Users of the footpaths between the Hall and the appeal site would undoubtedly be aware of the turbines and at times may hear them, though because the turbines and the Hall would not appear in the same

view, the impact on setting would be small. On the approach from the west the wind farm would appear as an extensive but decidedly separate development to one side of the listed building and any distraction would be limited. From the east Toseland Hall is mostly hidden by trees, even in winter, and the wind farm would not visibly intrude into its setting.

32. Overall I consider that, because of their height and movement, the closest turbines would have some detrimental effect upon the setting of Toseland Hall, detracting from its visual importance and its current association with the surrounding landscape. The impact would be limited, however, as a result of the separation distance and the obvious contrast in character between structures of distinctly different form and age. Moreover, as the aesthetic value of Toseland Hall derives primarily from its inherent fabric and architecture (which are best appreciated at relatively close quarters) rather than its landscape setting, and as the other key heritage values would be undiminished, the harm to the significance of the heritage asset would be quite small.

33. The impact would be limited further by the reversible nature of the wind farm. The current proposal is for 25 years, after which the wind farm is to be decommissioned and removed. Whilst such a period is substantial in terms of a person's appreciation of Toseland Hall, it is a relatively short period in the 400 or so years that the heritage asset has existed and the further time that it can be expected to endure. English Heritage guidance *Wind Energy and the Historic Environment* regards the reversibility of wind energy developments as an important feature in terms of the long term protection of the landscape.

34. PPS5 sets out a considered and detailed approach to historic heritage matters and, as the up-to-date expression of national policy, it carries greater weight than HLP policy En2. Because the development would affect the setting of Toseland Hall, rather than taking place within its setting, I think that PPS5 policy HE10 (rather than HE9) applies. I have concluded that the wind farm would detract from the significance of Toseland Hall, thereby causing some harm, albeit harm that is limited for the reasons given above. In such circumstances policy HE10.1 advises that the harm should be weighed against the wider benefits of the development: the greater the negative impact on the significance of the heritage asset, the greater are the benefits needed to justify approval.[2] I return to the necessary balancing exercise later.

35. In reaching this conclusion I have taken into account the concern that the presence of the wind farm would deter investment in the fabric of the building, thereby potentially resulting in physical harm to the asset. Whilst there may be, as the current owner suggests, a disincentive to carry out some works to the property which would restore elements of its original character, there is no real evidence that the existence of the wind farm would cause material harm as a result of neglect during the lifetime of the wind farm.

[2] I base my reliance on policy HE10 on the difference in terminology between policy HE9.1 ("significance can be harmed or lost through … development *within* its setting…"). and policy HE10.1 ("…applications for development which *affect* the setting of a heritage asset…."). This is further explained in paragraph 70 of the PPS5 *Historic Environment Planning Practice Guide.* But if I am wrong and policy HE9 is found to apply (specifically HE9.4 on the basis that the harm to significance is less than substantial harm), a similarly proportionate balancing exercise is required.

Other listed buildings

36. There are a large number of other listed buildings in the villages surrounding the appeal site. The impact of the development on each of the 21 grade I and II* buildings within 5km of the site was individually assessed in the ES; for grade II buildings, the assessment was made for all within 2km of the site where the wind farm was likely to be a prominent feature. HDC's concern was exclusively with Toseland Hall (see above) and the SAM (see below); whilst it identified some adverse impacts on the setting of other listed buildings within its area, it concluded that these impacts would be outweighed by the benefits of the proposal. SCDC took a very different approach, arguing that there would be major adverse impacts on a large number of listed buildings within its area. Based on the evidence given at the inquiry, I focus on the effects on the listed buildings in South Cambridgeshire and on those in Huntingdonshire which are addressed by CFA.

37. All the grade I and grade II* buildings are churches or manor houses, which typically have historic and/or functional relationships to the surrounding land and buildings. Churches tend to have the most extensive settings, for they are often prominent focal points within villages and can exert a commanding presence over a wide area. In Huntingdonshire, the Holy Trinity church at Great Paxton (1.5km from the nearest turbine) and St Peter's at Offord D'Arcy (2.4km from the nearest turbine) are both grade I. I saw that the tower or spire of these churches is visible in certain views, including at some distance from the west across the Great Ouse valley. However, because both churches are situated on relatively low ground, away from the village centre and surrounded by a churchyard which includes trees, neither is particularly prominent within the village or in the wider landscape. The immediate setting for each church focuses upon its churchyard and I found these to be intimate places. Although the turbines would be tall structures that, in views from the west, would be distracting to the eye, it seems to me that they would not compete with churches which have a relatively limited focus and do not dominate the landscape. Thus the impact of the development on the setting of these highly important heritage assets would not be significant.

38. The nearest South Cambridgeshire buildings are in Graveley, where the 13th century St Botolph's church is listed grade II*. The church is situated towards the northern edge of the village, on slightly lower ground, and is not conspicuous within the settlement. Distant views of the church tower with parts of all eight turbines to one side would be gained on the approach to the village from the north-east. Whilst the wind farm would draw the eye away from the church tower, I believe it would be seen as a clearly separate development on distant land well beyond the setting of the church. Because the church is surrounded by mature trees, its setting is best experienced from close by. I ascertained that visibility of the wind farm would be restricted to part of one or more turbine blades, at a distance of over 1.1km, seen through a gap in vegetation from limited areas of the churchyard. Despite their motion, the presence of turbine blades would represent a very small intrusion into the tranquil setting within which the values of this heritage asset are most keenly experienced. Overall, I consider that the development would have minimal impact on the setting of St Botolph's church.

39. Duck End Farmhouse at Graveley, a 17th century grade II listed cottage, would be the closest listed building to the wind farm (about 830m from the nearest turbine). Although land to the west, including part of the former airfield, was once associated with Duck End Farm, there is no evidence that the appeal site was part of this holding, so any historical relationship is uncertain. The present curtilage of Duck End Farmhouse is bounded by mature trees such that, even in winter when the trees are not in leaf, views of the turbines would be significantly screened by branches. Because the listed building is located close to the road in a secluded position, the overall impact of the development on the setting of Duck End Farmhouse would be very limited. Two other grade II listed buildings nearby in Graveley (Tudor Cottage and the barn south-east of Tudor Cottage) are also in relatively secluded positions, and their limited settings which relate to the village would not be significantly affected by the wind farm.

40. Home Farmhouse, listed grade II, occupies a prominent position at the eastern end of Graveley. Part of the nearest turbine would be visible in the principal views from the dwelling westward along High Street; the blade tips of other turbines may also be discernible in winter from the upper floors through the branches of trees. Whilst the nearest turbine would be conspicuous, at a distance of about 1.35km it would clearly be perceived as being beyond the village and far removed from the setting of this listed building. Consequently any impact on the value of this heritage asset would be slight.

41. In other, more distant settlements the main concern is the effect on the grade I and II* heritage assets. The churches of Holy Cross at Yelling, St John the Baptist at Papworth St Agnes and St Peter at Papworth Everard (all grade II*) have similar characteristics to those examined above, in that they are not centrally located or dominant within their respective villages and therefore exert little influence beyond the settlement. Indeed, the presence of mature vegetation and buildings around Holy Cross and St Peter's means that, visually, these churches are hidden from large parts of their settlements and would be unaffected by the development. Although St John's has a certain prominence in the wider landscape, the distance to the nearest turbine (over 3km) is sufficient to ensure that the development would have no significant effect on its setting. The grade I Manor House at Papworth St Agnes is hidden within extensive wooded grounds and though its historical significance extends throughout the settlement (both past and present), as with the church the separation distance is sufficient to ensure that the setting of this most important heritage asset would not be significantly affected.

42. The churches of St Lawrence at Diddington and St James at Croxton (both grade II*) are part of an open parkland landscape and thus have an extensive setting, though direct intervisibility with the wind farm would be restricted by trees. Whilst the wind farm would be conspicuous from the parkland around these churches (particularly St Lawrence's), at distances of almost 4km to the nearest of the two the impact on the setting of these heritage assets would be very limited. The superb complex of grade I and grade II* listed buildings at Buckden have a much more urban context and, being almost 5km from the nearest turbine and within a distinctly separate part of the landscape, their setting would not be materially affected.

43. I have considered the impact of the wind farm on all the other listed buildings assessed in the ES, including those nearby in Toseland which were not specifically addressed at the inquiry. In every case I have concluded that, even in those instances where one or more of the turbines would be visible from the heritage asset, the setting of the building would not be significantly affected by the development. Overall I conclude that the impact of the wind farm on the settings of the listed buildings in the surrounding locality would, at worst, be minimal or slight.

Scheduled Ancient Monument (SAM) in Toseland Wood

44. The SAM is an elaborate medieval moated site which comprises an island surrounded by a substantial moat together with associated fishponds, leats and ditches. In particular, the system of fishponds and leats is identified as one of the most complete examples in the region. The SAM is in a secluded position away from the built development of Toseland, with the greater part of the complex, including the moated island, wholly within the dense Toseland Wood. One of the fishponds (Lordship Pond) lies some 70m south of the moat within a small, separate area of woodland. Midway between the two is a shallow depression in a grass field which is thought to be a pond that has been largely infilled. There is no public access to Toseland Wood, so the only parts of the SAM that can be experienced from public footpaths are Lordship Pond and the shallow depression.

45. At the application stage English Heritage expressed concern about the adequacy of information supplied regarding the SAM, though it provided no detail as to what might be required. Additional photomontages submitted for the inquiry clearly illustrate the effect of the development on the SAM. As the nearest turbine would be about 370m from the SAM, there would be no direct impact on the heritage asset. The SAM description refers to the moated site as largely undisturbed and well preserved, stating that it will contain buried evidence which will illustrate the development of the site and the surrounding area. Thus the significance of the SAM is primarily its evidential value, which would be unaffected by the development.

46. In terms of visual intrusion, from within Toseland Wood (the most important part of the SAM) dense tree cover would wholly hide the turbines in summer, with perhaps indistinct glimpses of the movement of the upper part of the nearest turbine blades being obtained in winter. Even from Lordship Pond most of the turbines would be masked by tree cover. From the open part of the SAM (the shallow depression) the nearest turbine would be seen towering over Toseland Wood, with the blades of some more distant turbines also visible. In these views I consider that the modern materials and verticality of the turbines, plus their large scale, would bear no similarity to the earthworks and as such they would not be read as having any relationship to the SAM. Thus, whilst the turbines might draw the eye from certain points, I do not consider that this would result in significant detraction from a SAM which requires focus at ground level.

47. Turning to concerns about turbine noise affecting the tranquillity of the SAM, the most audible noise is likely to be the repetitive swish associated with the rotation of the blades. Because of the rhythmic nature of the noise at a generally low level, I think it is unlikely to detract significantly from the sense

of isolation. Nor would it undermine the medieval history of this site, which is situated in a landscape that is subject to changes in agricultural practices. Moreover, it is possible that much of the turbine noise would be masked by that of the trees within the woodland, particularly during summer months when they are in full leaf. I conclude that the proposed development would cause no material harm to this important heritage asset, the prime interest of which lies in the landform and the undiscovered evidence buried within the earthworks.

Registered Park and Garden

48. Croxton Park is a grade II* registered park and garden situated some 3.6-5km south-east of the proposed wind farm. The Park covers 80ha and includes 11 listed buildings (two grade II*) and a SAM. The early 19th century landscaped parkland setting around the main house, Croxton Park (grade II*), includes a 16th century deer park and the remains of formal gardens of similar age. The designed landscape has clear focal interest points based on Croxton Park, the Church of St James (grade II*) and the roughly triangular lake. It also has pasture land with careful planting including clumps, stands and specimen trees, the whole being largely enclosed by belts of woodland to create a contained naturalistic scene.

49. The woodland at the edge of the Park, particularly that adjoining the main A428 road, creates a verdant screen which largely cuts out the world beyond. However, this does not wholly prevent evidence of modern activity such as sight of a communications tower and the noise of vehicular movement along the road. From certain parts of the Park the uppermost part of some turbine blades would be seen rotating above the peripheral trees, causing a further intrusion out of character with this designed landscape. However, whilst they would be a distraction, the turbine blades would form a very small component of the overall view from the relatively few publicly accessible parts of the Park from which they could be seen. Overall, therefore, I consider that the development would have only a marginal effect on the Park and its historic landscape.

Conservation areas

50. HDC does not express any concerns about the effect of the proposed development on conservation areas. However, SCDC is concerned at the impact on views out from Papworth St Agnes, Croxton, Papworth Everard and Eltisley conservation areas in particular, which are between 2.8km and 5.1km approximately from the wind farm. It is evident that each of these conservation areas is of high quality. The nearest, Papworth St Agnes, contains a high proportion of listed buildings and extensive evidence of historic settlement. From much of the present village there would be no awareness of the wind farm; although the turbines would be quite prominent from certain open parts of the conservation area, the cluster would appear as a distant feature forming a modern addition to the wider landscape. Overall, I consider that the pastoral landscape setting for this conservation area would be preserved. At Papworth Everard the top of some turbine blades might just be visible from parts of the small conservation area around the church and Papworth House, but at such a distance that the effect on the character of the area would be negligible.

51. Croxton conservation area is set within the registered Park and Garden and has an inward looking linear street. Moreover, being estate-based there is a distinct character to the architectural form. As such, any glimpses of the distant turbines would be seen as standing apart from the established character of this conservation area. The Eltisley conservation area also has a distinct inward focus towards The Green, a large triangular open space which contains some 13 listed buildings. Viewed from within the conservation area, the wind farm would mostly be hidden by the buildings and vegetation that line the northern edge of The Green. Glimpses of turbines might be obtained through gaps, but they would appear as insignificant and distinctly modern additions to the backdrop of this attractive conservation area, whose interest is partly derived from the wide variety of buildings of differing eras.

52. Overall the impact of the development on conservation areas in South Cambridgeshire would be very limited, and in all instances the essential character and the predominant appearance of the area would be preserved.

LANDSCAPE CHARACTER AND VISUAL AMENITY

53. The appeal site is within an area of gently undulating, mostly arable, lowland farmland. It is part of a plateau to the east of the valley of the River Great Ouse that comprises large fields and a few sporadic areas of woodland. Field boundaries in the immediate locality are not strongly defined; many fields are open to roads and farm tracks, others are bounded by hedgerows (with gaps in places) and occasional trees. Settlement on the plateau consists of occasional scattered farms and small villages, the latter often located around streams that drain the plateau. A greater concentration of settlement occurs along the Great Ouse valley. Remains of historic features such as Roman roads and moated settlements suggest that the plateau was once more densely populated. Overall the landscape of this part of the plateau is large-scale and open, with broad vistas and big skies.

Landscape character

54. The *Townscape and Landscape Assessment* SPD indicates that the high quality landscape of much of the South East Claylands character area, a product of well managed farmland, attractive villages and established woodland, creates an intimate and tranquil landscape. The study recognises, however, that there are parts where the loss of vegetation due to agricultural change has led to a larger scale landscape wherein the sense of intimacy and tranquillity has been lost. The appeal site and its environs are one such area, the larger scale in this case arising partly from the previous use of Cotton Farm as an airfield during World War II. This area has not been recognised, either at national or local level, for the high quality or value of its contemporary landscape, and I regard it as having medium quality and value.

55. The *Wind Power* SPD identifies the South East Claylands as having a high capacity to accommodate a small scale group of 2-12 wind turbines and a moderate capacity to accommodate a medium scale group of 13-25 turbines. The stated criteria for a small scale group include avoiding the more undulating and enclosed landscape to the south of the character area, avoiding areas with a large number of vertical elements, respecting the scale and setting of the small villages and key historic features, considering the visual relationship with

the Great Ouse valley, and having a simple linear arrangement of turbines which relates to the landform and responds to the geometric field pattern.

56. The proposed development is broadly consistent with this guidance. The two rows of four turbines would be simply arranged on a level part of the plateau, away from the smaller scale, more sensitive parts of the landscape character area. At 127m high to blade tip the very large turbines would dominate the immediate locality, creating a "wind farm landscape" within a radius of about 800m; although most of this area is farmland, it includes the western edge of Graveley village. There would manifestly be a high magnitude of change in this zone, though the imprints of war-time use and modern agricultural practices (large fields, industrial farm buildings, loss of hedgerows and so on) give the landscape a relatively low sensitivity and thereby an ability to better accommodate such structures than the more sensitive parts of the character area.

57. At a distance of 0.8km to 1.5–2.5km the wind farm would not dominate to the same extent, but would be a major component (or sub-type) of the landscape. This zone includes a number of surrounding villages, thereby increasing the sensitivity of the landscape to change. For the most part, however, the settlements are not major elements of the plateau landscape, those on the plateau either being inward looking (Graveley and Yelling) or scattered and lacking a distinctive form (Toseland), while those on the edge of the plateau (Great Paxton and Offord D'Arcy) are focused on the Great Ouse river valley. Even the towers and spires of the churches in these settlements are not the strong landmark features that often define villages from afar. Thus despite its prominence, the wind farm would be a discrete component of the landscape within this zone, clearly associated with the large scale agricultural landscape rather than with the more intimate scale of the settlements.

58. Beyond 2.5km the wind farm would continue to exert a strong influence over the landscape, albeit one that diminishes with increasing distance. The greatest impact would be felt within and on the western side of the Great Ouse valley, from where the development would be prominent on the eastern skyline, though the impact on the valley landscape would diminish with increasing distance northwards and southwards from the site. The zones of theoretical visibility suggest that parts of the turbines would be visible from some locations 15-30km away (and beyond), but at these distances the development would be such a small component that any impact on landscape character would be negligible. Overall I consider that the development would have a moderate impact on the South East Claylands character area (and the adjoining Western Claylands character area in South Cambridgeshire), a moderate to low impact on the Ouse Valley character area, and low to negligible impacts on more distant landscape character areas.

Visual impact

59. The visual impact of the wind farm from a sizeable number of viewpoints was assessed in the ES, with additional locations investigated in evidence produced at the inquiry. I deal with the impact on the occupiers of individual dwellings (the most sensitive receptors) separately; in this section I assess the impact from publicly accessible locations such as roads, footpaths, recreation areas and settlements. I also approach the matter from the standpoint that the

visual impact as perceived by most people would be adverse rather than beneficial or neutral, on the basis that a cluster of very tall, highly engineered structures each with a major rotating component would be a discordant and somewhat alien intrusion into a tract of countryside of moderate quality. I note the appellant's argument that public attitudes towards wind turbines often become more favourable once they are built, but my task is to make an objective assessment of the changes to views which would occur.

60. Public viewpoints within 800m of the proposed turbines are relatively few, the most accessible being Toseland Road within and south of Graveley. The closest turbine would be about 600m away, from where all the turbines would be visible in two distinct rows (with turbines "stacked" behind others in places) to a distance of 1.9km. The turbines would have a dominant and arresting impact on views across the open fields to the west, representing a change of major significance. Nevertheless, with its balanced layout and permeable nature, I consider that the development would be satisfactorily assimilated into the expansive and largely featureless farmland of this part of the plateau.

61. Closer views would be obtained from the public footpaths north of Toseland. The turbines would mostly be seen behind Toseland Wood, reducing their impact to some extent, though at one point the nearest turbine would be about 350m away and in full view. Whilst some footpath users might find such proximity unpleasantly overwhelming, it would be a relatively small part of their overall recreational experience; moreover, this point is not a key part of the footpath network and alternative routes are available. I note that part of the footpath network north-east of College Farm would be just over 100m from turbine 3, but because this route terminates at the appeal site boundary it is little used and of minimal significance.

62. Views along the length of the array of turbines would be obtained from the historic footpath from Toseland to Great Paxton (at about 700m to the nearest turbines on average) and from Offord Road (at just over 900m away). For footpath users the wind farm would be a major intrusion into views on one side of their journey, which for some people would substantially detract from the enjoyment of the walk. Those travelling along Offord Road would have similar views, though with a greater separation distance and shorter journey times associated with travel by car (or bicycle), any loss of amenity would generally be less. The same applies to travellers along the road west from Toseland – the open nature of the plateau landscape means that the turbines would be a major and constant presence in views to the north, though at sufficient distance (around 1.0-1.5km) not to be dominant. Indeed, the very openness which allows extensive views of the wind farm is the fundamental attribute which gives the landscape the ability to assimilate development of this scale.

63. From villages the turbines would be most conspicuous within areas of loose-knit settlement which lie on the plateau, notably Toseland and the south-western part of Graveley. Although there would be locations (particularly in Toseland) where buildings and trees would shield the turbines from view, from other parts the wind farm would be prominent and would have a significant impact on people as they moved about these areas. In other villages close by, including the rest of Graveley, Yelland, Great Paxton and Offord D'Arcy, the reverse situation applies. Whilst there would be glimpses of turbines from certain locations, mostly on the settlement edges, the wind farm would not be

a constant presence to people as they moved around these villages. As an illustration, I believe that sight of the upper part of a turbine blade rotating above the trees along a section of High Street in Graveley would be a moderate intrusion which would be subordinate to the wider village-scape. Overall, and recognising that Toseland lacks a distinctive village form, the development would not have a significant impact on the essential and valued character of nearby villages.

64. At distances of up to about 3.5km the wind farm would still have the capacity, in some sensitive locations, to cause a change of major significance. This would tend to occur mostly to the west, within or across the Great Ouse valley, as a result of the turbines featuring prominently on the plateau beyond. The development would be highly visible from parts of the recreation routes and nature conservation sites within the valley, though it would not represent the only intrusion as a result of trains on the nearby East Coast main line frequently disturbing the otherwise tranquil environment. On the western side of the valley the two groups of four turbines would be conspicuous, albeit in a narrow angle of vision, from the small settlement of Diddington.

65. At greater distances the wind farm would comprise a relatively small component of the overall view. Even at sensitive locations where it would be wholly visible, as at Grafham Water, it would only cause a change of moderate significance. Whilst there would be glimpses of the turbines from some locations much further away, with increasing distance they would become ever smaller features relative to the size of nearby buildings and vegetation. And although there are a few locations where the effects of more than one wind farm could be experienced, the distances are sufficient to ensure that no significant adverse cumulative effects would result.

66. The Council contends that the ES proposes insufficient landscape enhancement to mitigate the impact of the proposal, as sought by development plan policies. Plainly no amount of landscaping could disguise turbines of the size proposed, so it is reasonable that mitigation should be directed towards improving the structure of the landscape and biodiversity. The plan in the ES shows over 1.5km of hedgerow/tree planting or reinstatement along the boundaries of the site (including all the roadside boundaries) and a range of Environmental Stewardship features. I accept that this is a relatively limited package given the size of the appeal site and the scale of the development. The ES plan is only illustrative, however, and I believe that more appropriate mitigation could be secured by a condition requiring a detailed landscape and habitat management scheme to be submitted for the Council's approval.

Landscape character and visual amenity - conclusion

67. For functional reasons, wind turbines are necessarily very tall and highly engineered structures; as a consequence, they will generally cause a substantial change to landscape character and visual amenity when installed in the countryside. But such change is not, in itself, inherently harmful. As with most development, the acceptability of a wind farm proposal depends in large measure on the ability of the site and the surrounding area to accommodate the number, size and layout of turbines proposed. In this case the site is part of a lowland plateau where modern agricultural practices have resulted in large arable fields bounded by relatively sparse vegetation. Whilst the gently

undulating terrain and scatter of villages make the area moderately attractive, it is not recognised as a landscape of high quality. Despite the major significance of the change, the capacity of this man-made landscape to accommodate the wind farm means that, overall, the adverse effect would be limited.

68. Moreover, the wider South East Claylands character area is identified by HDC as having a high capacity to accommodate a group of turbines of the number and size proposed. The appeal scheme satisfies the criteria set out – in particular, it would have a simple linear arrangement of turbines which relates well to the large scale of the landform, it would respect the scale and setting of the small villages and key historic features, and it would have an acceptable visual relationship with the Great Ouse valley. Thus, subject to suitable mitigation, I consider that the adverse effect of the wind farm on landscape character and visual amenity is within the limits envisaged by the broad policy framework.

LIVING CONDITIONS OF NEIGHBOURING OCCUPIERS

Noise

Background

69. A Department of Trade and Industry 1997 report "*The Assessment and Rating of Noise from Wind Farms"* (ETSU-R-97) sets out a detailed methodology for noise assessment which was adopted by the applicant in the ES and in subsequent evidence to the inquiry. PPS22 and its Companion Guide endorse the use of ETSU-R-97; continued support for the use of the methodology was confirmed by the Government as recently as July 2010.[3] The Companion Guide refers to ETSU-R-97 as giving "indicative noise levels calculated to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding unduly to the costs or administrative burdens on wind farm developers or planning authorities". The application of British Standard (BS) 4142 to noise from wind farms was considered in the preparation of ETSU-R-97 and, as the latter was specifically formulated to overcome the shortcomings of the former, it is not necessary to consider BS 4142 further.

70. HDC and SDDC raise no objection to the appeal proposal on noise grounds. The environmental health officer for HDC considered the ES assessment to be robust and, despite a relatively small margin above predicted day-time noise levels at one property (Cotton Farm), concluded that the proposal was acceptable subject to the imposition of planning conditions to control noise immissions.[4] However, substantial objections to the noise impact of the development were made by CFA and many local residents. CFA challenges both the manner in which the noise assessment was carried out and the reliance on certain parts of ETSU-R-97 as an appropriate means of determining acceptability.

[3] In the form of a written answer by Charles Hendry MP to a Parliamentary question seeking a statement on the continued appropriateness of ETSU-R-97 in the assessment of noise from wind farms.
[4] The term used to describe the noise experienced at receptor locations.

Background noise measurements

71. ETSU-R-97 advises that background noise measurements should be taken in free-field situations at least 10m from a building façade. However, if sheltered locations closer to a dwelling are most often used for rest and relaxation, it indicates that measurements may be taken up to 3.5m from a façade, though it recognises that noise levels may be influenced by reflections from the façade. The dwellings at which monitoring took place in this case were agreed with environmental health officers of both HDC and SCDC. At all sites I believe that the locations most used for rest and relaxation would have been obvious, thereby obviating the need to consult with residents (indeed, such consultation is not mentioned in the ETSU-R-97 guidance). Moreover, there is no criticism from the Councils that the chosen locations were not suitable.

72. At College Farm I saw that the most used part of the rear garden lies between the rear elevation of the dwelling and a line of trees on the boundary; other private garden areas are also close to trees. In situations like this a judgement has to be made, balancing the desirability for measurements in sheltered garden areas, where reflected noise or noise from trees could be present, against unconstrained free-field locations. In this instance I believe that the chosen monitoring location in the adjacent open field was appropriate. Similar considerations apply at Cotton Farm. At Duck End Farmhouse a part of the garden away from the most used area close to the dwelling was chosen to avoid noise from a stream; again I regard this as appropriate.

73. I agree that the elevated location between a lorry and a metal container at Green Acres was not ETSU-R-97 compliant, thereby casting doubt on the reliability of the results. However, because of the line of trees around the small private garden and the commercial activity nearby, I recognise that no ideal location existed. It is simply not possible to say whether the measured noise levels should be reduced by 3dB(A) to account for sound reflected from hard surfaces, as CFA submits, or whether reflected noise is balanced by the shielding effect of the structures, as the appellant contends. I note that the corrected average noise levels at Green Acres are generally lower than those from Duck End Farmhouse nearby; they are also broadly consistent with noise levels found elsewhere in the locality, albeit slightly higher at the lowest wind speeds. This suggests to me that the appellant's figures for Green Acres are probably not too far from the mark. Furthermore, CFA has not provided hard evidence of materially lower levels at this property. Whilst this situation is not entirely satisfactory, on balance I conclude that the appellant's figures should be used.

74. As to CFA's concern that the measured locations are not sufficiently representative for use at other properties, ETSU-R-97 requires representative properties to be agreed with the local authority, which occurred in this case. College Farm is a more isolated location (and thereby potentially quieter) than those for which it is proxy and I find no basis for concluding that it is not representative. And whilst I have reservations about the use of Green Acres' data, for the reasons given above, there is no better information before me that could be used as being more representative.

75. A further concern of CFA is that the removal of atypical data from the survey results has been done improperly. There is no compelling evidence, however,

that large amounts of data have been removed without some justification, nor that the data removed was designed to minimise the spread of results and improve the closeness of fit. Indeed, examination of the results suggests that (as usually occurs) most of the anomalous readings removed relate to higher noise levels; if these had been left in, the average background noise level would have increased, potentially reducing the level of protection given to local residents. As to criticism of the range of wind directions that were measured, I find no evidence that wind directions during the monitoring period were significantly unrepresentative of long term conditions.

ETSU-R-97 limits

76. ETSU-R-97 indicates that noise from a wind farm should be limited to 5dB(A) above the background levels experienced at the nearest noise-sensitive properties, with separate limits for day-time (to protect external amenity) and night-time (to prevent sleep disturbance). In low noise environments, such as the rural area around the appeal site, noise should be limited to an absolute level in the 35-40dB(A) range (or 5 dB(A) above background where this is greater), the actual value depending on the number of dwellings nearby, the effect of limits on the number of kWh generated, and the duration and level of exposure. At night a fixed limit of 43dB(A) applies, intended to provide an internal level of 35dB(A) when allowing for attenuation through an open window.

77. A day-time limit of 40dB(A) was proposed in the ES, based primarily on the fact that a lower limit would have produced an exceedance at Cotton Farm. At the inquiry it was proposed that a limit of 35 dB(A) be adopted for all properties except Cotton Farm, for which a 40dB(A) limit should be retained. Cotton Farm is the dwelling on the farm where the turbines would be erected, and though it is occupied by the farm manager rather than the landowner, he would receive an annual payment for work in connection with the operation of the wind farm. ETSU-R-97 advises that noise limits can be increased to 45dB(A) where the occupier of a property has some financial involvement in the wind farm. Despite CFA's protestation that the payment to the farm manager is merely a device to circumvent ETSU-R-97, I consider that the extent of financial involvement is sufficient to satisfy the guidance. Overall, therefore, the noise limits proposed now are at the low end of the range permitted by ETSU-R-97, and appreciably lower than those accepted by HDC when the application was determined.

Predicted noise levels - noise propagation

78. The appellant uses the guidance on noise propagation given in ISO 9613-2. CFA's basic premise is that because these guidelines are not specifically designed for elevated noise sources or high wind speeds, and because the standard uses averaged values which reflect varying meteorological conditions (and even then only predicts accuracy to within +/- 3dB), certain margins of error should be added to properly reflect worst case conditions. One such precautionary measure, according to CFA, is to use a "hard ground" value of zero in all situations. I do not believe this is justified in circumstances where virtually all the land between the turbine and the residential receptors (including most of the areas close to the dwellings) are covered with vegetation. Indeed, there is merit to the appellant's contention that the use of

a "mixed ground" value of 0.5 in this case, rather than the "porous ground" value of 1.0 which could be justified by the ground conditions, builds in a margin for error.

79. In view of the uncertainties associated with the use of ISO 9613-2, both parties provided details of research which compared predicted noise levels with noise measurements carried out at operational wind farms. I consider that greater weight should be given to the appellant's evidence, which cites a paper (albeit not peer reviewed) submitted to an international conference on wind turbine noise, than to surveys carried out by CFA's consultant for which details are limited and which record measurements in L_{Aeq} form rather than L_{A90}. The appellant's paper concludes that ISO 9613-2 offers a robust means of assessing upper turbine immission levels in favourable, downwind propagation conditions. Overall I am satisfied that the appellant's approach to noise propagation is appropriate and that there is no need to add in a 3 dB(A) error margin, a margin for hard ground, or any other margin.

Predicted noise levels - wind shear

80. ETSU-R-97 proposes that measurements of wind speed used in determining turbine "source" noise levels should be corrected to a standard height of 10m using a formula which assumes a constant relationship between hub height wind speed and 10m height wind speed. With increased knowledge and experience, gained partly as a result of the much larger turbines now than were prevalent at the time ETSU-R-97 was published, there is greater awareness of how wind shear (the variation in wind velocity with height) varies from site to site and in different weather conditions. In particular, it is recognised that higher levels of wind shear can occur in stable atmospheric conditions, typically experienced during clear summer evenings and nights when wind speeds are low.

81. To overcome what is perceived as a shortcoming of ETSU-R-97, the appellant has adopted a methodology which uses wind speed measurements taken on site at different heights (30m and 50m) to derive a "shear exponent" which is used to calculate the wind speed at hub height; this is then corrected to a 10m hub height value using the same assumption about wind shear as used by the turbine supplier (who used the "ground roughness length" of 0.05m stated in ETSU-R-97 for farmland). In this way it is argued that wind shear which reflects site specific atmospheric conditions is taken into account. This approach is recommended by a group of prominent acousticians (including Dr Bullmore, the expert witness for the appellant) in an article published in the Institute of Acoustics (IoA) Bulletin, though its use is not supported by all in the profession. CFA argues that this underestimates the effects of wind shear, and that rather than using the derived 10m wind speed for correlation against background noise measurements, the measured 10m wind speed should be used instead.

82. Despite the appellant's contention that the IoA preferred approach is consistent with ETSU-R-97, the use of a shear component to derive hub height wind speed introduces a new variable into the equation which is not present in the ETSU-R-97 formula for wind shear. On the other hand, the principle upon which the IoA approach is predicated does broadly reflect ETSU-R-97, which allows for assessments of wind shear to be based on measurements at two

different heights which are then corrected to a standard height of 10m. On balance, I think it is reasonable to adopt an approach which takes account of a variability in wind shear that was not fully appreciated at the time that ETSU-R-97 was published. I also place some weight on the appellant's argument that it is important to compare like with like in deciding whether derived or measured 10m height wind speeds should be used, with the need for consistency pointing to the use of 10m height values which are standardised with reference to noise levels derived at hub height. However, having regard to the differences between experts in this highly technical and complex matter, this is not a conclusion that I reach with any firm conviction.

83. In these circumstances, I draw comfort from the appellant's analysis of the difference between measured and standardised 10m height wind speeds and the application of average shear correction factors to the background noise levels at College Farm and Green Acres, the two most critical locations. This analysis demonstrates not only that the noise limits derived would not be breached when related to measured 10m height wind speeds, but also that there is a reasonable margin (in excess of one standard deviation) to allow for atypical conditions. I acknowledge that Mr Stigwood (CFA's noise expert) comes to a different conclusion by separating out specific wind shear values, but I was not provided with any cogent evidence that departing from average wind shear values in this manner is a widely used or valid approach. I accept that average values mask peak occurrences, but it is not clear to me that the instances of high wind shear identified by CFA are untypical of the average wind shear values used by the appellant.

Noise conditions

84. CFA is highly critical of the noise conditions that are applied to wind farms, believing them to be cumbersome, unduly complex and difficult to enforce. That they are complex is unquestionably true, but that does not make them unacceptable. The tests are set out in Circular 11/95: *The use of conditions in planning permissions*; one of the main reasons for the complexity is the need to satisfy the precision and enforceability tests. I accept that there could be a delay in enforcement because of the measurement process necessary to establish whether breaches have occurred. However, part of the delay is likely to be caused by the need to wait for weather conditions that are conducive to the particular complaint; clearly at other times the problem will not occur and any harm would not exist.

85. The conditions have been formulated following a detailed discussion at the inquiry in which I asked CFA to assist me in arriving at the most appropriate wording, notwithstanding their objection in principle to the conditions, and I am satisfied that they represent current best practice. CFA believes that the noise levels should be based on measured 10m height wind speeds, rather than the standardised 10m height speeds derived by calculation from the hub height speeds. For the reasons already given, however, I believe that the use of standardised 10m wind speeds is appropriate.

86. Much of the debate concerned the need for a condition to control "excess" amplitude (or aerodynamic) modulation (AM, commonly referred to as blade swish). The noise levels recommended in ETSU-R-97 make some allowance for AM; however, given its variability and unpredictability, the guidance is unable

to suggest an accurate measurement methodology, let alone a procedure to predict the likely occurrence of excess AM. CFA argues that this uncertainty, coupled with specific locational and design characteristics which, in its view, point to a risk of excess AM at the appeal site, warrants a precautionary condition which would require the problem to be addressed if it was to occur.

87. It seems that knowledge of excess AM has advanced little since ETSU-R-97 was prepared. Various factors are postulated as possible causes – squat turbine designs, linear turbine arrangements, turbines too closely spaced together, high levels of wind shear, reflective surfaces close to the receiver – but these are largely speculation based on the relatively few cases where excess AM is acknowledged to occur. The 2007 Government-commissioned Salford study into AM found that its incidence is low, being a factor at 4 out of 133 operational UK wind farm sites (and a possible factor in another 8); it found that complaints have subsequently subsided at 3 of these 4 sites, in one case as a result of remedial treatment. Based on the findings of low incidence and the number of people affected being small, the Government's view is that there is not a compelling case for more work on AM and that the minimisation of increases in noise through the use of ETSU-R-97 remains appropriate. I place greater weight on the results of this study than on the research carried out by Mr Stigwood, for there is no evidence before me of correlation between his purported findings of excess AM (which he regards as widespread at some locations) and complaints, let alone complaints that have been found to be justified.

88. I have considerable sympathy for those few people who have suffered from the effects of excess AM, for the pulsating nature of the noise undoubtedly causes them significant distress and can lead to sleep disturbance at night. I also find it frustrating that wind turbine noise experts have not managed to pinpoint causal factors, for the absence of a predictive tool understandably gives rise to deep concern among residents close to any proposed wind farm that excess AM could affect them, as if by chance. In this particular case it seems to me that some (but not all) of the postulated risk factors are present, to some degree, in the design and layout of the Cotton Farm proposal.[5] I was also advised, however, that such factors are exhibited at other wind farms where excess AM has not been identified. This apparent lack of a consistent or identifiable pattern exemplifies the problem – in short, based on current knowledge it is simply not possible to predict in advance the likelihood that a particular proposal would give rise to excess AM.

89. Given the small number of sites where excess AM has been proven, statistically the odds are very much against it being a problem at Cotton Farm. I appreciate that some similarity with problem sites (such as Deeping St Nicholas) might be argued to reduce the odds somewhat, but not to the extent

[5] A linear arrangement of turbines would clearly exist. Wind shear has already been considered. There is no evidence that, at most locations, surfaces close to the receiver would be particularly reflective. As to distance between turbines, CFA contends that in 5 out of 6 instances, the desirable distance of 4 times rotor diameter (for turbines perpendicular to wind direction) is not met. My measurements from the Site Plan (drawing REN/COT/003/A) reveal that only in two instances is the distance not met (based on centre to centre measurements); in one case the shortfall is just 2m, whilst in the other (turbines 4 to 6) the distance is 345m rather than the 300m suggested by CFA. It must be highly questionable whether such small differences below the desired 360m distance result in this risk factor being present at all, but even if it is, it is not present to any great extent.

that it can reasonably be regarded as a distinct possibility, let alone a probability, in my view. Thus I find no compelling evidence that warrants an approach to AM in this case which differs from that taken in ETSU-R-97. In these circumstances I do not believe that the suggested condition satisfies the test of necessity, even on a precautionary basis.

90. In the unlikely event of a problem of excess AM arising, the appellant suggests that it could be addressed by the local authority using statutory nuisance powers. Whilst I have some misgivings about this procedure because of the much higher threshold of harm that would inevitably apply, I see little option but to conclude that this is the best means currently available of resolving this issue.

Health concerns

91. CFA argues that a significant proportion of residents living in Graveley, Toseland and most of Great Paxton would experience levels of night time noise that would disturb sleep, thereby leading to increased risk of a range of health problems. Its case is predicated largely on the contention that the night time noise level of 43 dB(A) given in ETSU-R-97 is too high. This assertion is based on the findings of a number of research studies from across the world which suggest that some individuals who are least able to tolerate noise have experienced sleep disturbance from exposure to wind farms at lower noise levels, thereby leading some bodies to recommend night-time levels significantly below 43 dB(A).

92. I accept that sleep disturbance and the consequent implications for health are a material consideration in this case and I have given much thought to the review of research and to the experience of individuals who have been affected by noise from wind farms. Much of the research has methodological shortcomings, however (as CFA's expert fairly acknowledged), and whilst it mostly points to lower night-time noise levels, no consistent level or measurement method emerges. As to the experience of those living close to wind farms, one witness who gave evidence is the occupier of the one 'unresolved' case referred to in the Salford study, while in the other case the complaint was investigated by the Council (HDC) but not found to be a problem. Moreover, in both cases it appears that there is some difficulty with implementation of the noise condition, which does not reflect current best practice. Whilst I do not belittle the particular problems that these occupiers are experiencing, the evidence does not suggest that they are representative of wind farms generally.

93. As stated above, it remains Government policy that ETSU-R-97 should be used to assess and rate noise from wind farms. The appellant has demonstrated that the development would operate broadly within the parameters set out in ETSU-R-97, and conditions have been proposed to ensure compliance. It is an important principle of planning control that each decision is based on its individual merits, however, and I am not required to slavishly follow Government policy, nor do I consider my decision to be fettered by it. Nevertheless, broad compliance with ETSU-R-97 is a matter to which I attach substantial weight, and I believe that CFA's case would have to demonstrate special or particular circumstances of even greater weight to override it. In my view the evidence on noise and the potential risk to health in this case is not so

compelling as to outweigh a scheme which would operate within Government guidelines. Other potential concerns, including shadow flicker, can be addressed satisfactorily by conditions.

94. In reaching this conclusion I have taken into account the circumstances of those people living close to the wind farm who have specific medical conditions and may be especially sensitive to the development. However, for the reasons given, I am not persuaded that the understandable concerns which they have carry such weight as to warrant a rejection of this proposal on health grounds.

Noise - conclusion

95. As previously indicated, the objective of ETSU-R-97 is to strike a balance which offers a reasonable degree of protection to local residents whilst not unduly constraining wind farm development. It seems to me that CFA's approach is contrary to this objective, for it seeks to build in so many constraints and margins of error that the appeal proposal would not be able to comply. Such an approach is not consistent with ETSU-R-97 which, as the Government has affirmed, remains the appropriate standard.

96. The appeal proposal has been thoroughly tested against the ETSU-R-97 criteria and, in general, has been found to comply. In those instances where there is non compliance, such as the selection of the monitoring location at Green Acres, the results appear to be broadly consistent with nearby locations and there is no other information which would lead to a better decision. There is a consensus among some professionals that ETSU-R-97 does not fully reflect current thinking on wind shear; the approach adopted by the appellant seems to me to embody the principles of ETSU-R-97 and is being widely used - indeed, I note that the Secretary of State has accepted the methodology in some of his decisions. I am satisfied that other aspects of the forecasting process, including noise propagation, are appropriately handled. And whilst the conditions are complex and not easy to enforce, I believe them to be fit for purpose and to accord with current best practice.

97. The frequency with which noise conditions are likely to be breached is often a consideration in wind farm proposals. In this case I am satisfied that there is a reasonable margin between the noise limits and the predicted noise levels, which suggests that breaches are unlikely to be a regular occurrence. Equally important in this case is the fact that day-time noise limits for all but the property with a financial interest in the scheme have been lowered to 35 dB(A), the lowest level recommended in ETSU-R-97 and 5 dB(A) lower than those found to be acceptable by the Council at the application stage. Thus the noise climate with which the developer is expected to comply is more stringent than might have been expected for this location. Taking all these factors into account, I conclude that nearby residents should not be subject to undue levels of noise as a result of the proposed development.

Visual impact

98. Although the broad visual impact of the development on the surrounding locality was addressed under the landscape issue, an important subset of that impact is the specific effect of the wind farm on the outlook from nearby residential properties. CFA (but not the Council) argues that the impact on some residential properties would be so seriously harmful as to render the

proposal unacceptable. There was general agreement between the parties that the approach used by HDC, which had adopted the test set out by my colleague Inspector, David Lavender, in his Enifer Downs (North Dover) decision[6], is appropriate. He wrote:

> *"…… when turbines are present in such number, size and proximity that they represent an unpleasantly overwhelming and unavoidable presence in main views from a house or garden, there is every likelihood that the property concerned would come to be widely regarded as an unattractive and thus unsatisfactory (but not necessarily uninhabitable) place in which to live. It is not in the public interest to create such living conditions where they did not exist before".*

99. Inspector Lavender's comment was made in the context of the advice in the PPS22 Companion Guide which, for wind energy projects, affirms the basic principle that *"The planning system exists to regulate the development and use of land in the public interest. The material question is whether the proposal would have a detrimental effect on the locality generally, and on amenities that ought, in the public interest, to be protected".* In terms of visual amenity, this translates into the long established principle that there is 'no right to a view', meaning that it is not possible to protect a property simply on the basis that an attractive or cherished view would be adversely affected by development. Inspector Lavender's test is one way of expressing the point at which the private and public interests coincide such that, to an objective observer, the outlook from a dwelling would be so harmed as to generally be regarded as unacceptable.

100. The properties most directly affected would be those to the east on Toseland Road, Graveley that directly overlook the turbines, along with College Farm and Cotton Farm. From the evidence I am satisfied that the occupiers of Cotton Farm would have employment and financial interests in the wind farm and are therefore less sensitive receptors than other local residents who would have the development imposed upon them; accordingly I have not considered this property further.

101. Four dwellings on Toseland Road would have direct views towards the turbines, from No 97 (Alwinds) in the south, which would be some 620m from the nearest turbine, to No 60 in the north, which would be about 660m distant. The northernmost row of turbines would be almost directly ahead of the front elevation of Alwinds, a bungalow, and would be seen as a closely spaced, partly stacked group extending to about 1.7km distant; the southernmost row would appear more spaced out and noticeably smaller as a result of the greater (0.95 – 2.0km) separation distances. The wind farm would be seen in a relatively narrow arc to one side of the 'straight ahead' view. With little intervening vegetation, the turbines would patently be highly conspicuous in the outlook from the front of Alwinds as a result of their great height and movement of the blades. However, the distances are sufficient to ensure that the turbines would not be overpowering. In addition, they would form just part of the wide panorama across the open fields of this flat, expansive plateau, and their permeability would ensure that the spaciousness and views of distant horizons would remain. Views from other elevations and from the part of the rear

[6] APP/X2220/A/08/2071880, paragraph 66.

garden closest to the dwelling would be unaffected. Overall, whilst the change in outlook would be dramatic and, in some views, unavoidable, I do not believe it would be unpleasantly overwhelming.

102. At No 60, a two-storey dwelling, the wind farm would encompass a slightly wider arc of vision, though this would be partly off-set by the marginally greater distance and more acute angle to the nearest turbine. In this instance, because the rear elevation of the house and the private rear garden would be affected, the impact is likely to be felt more keenly. On the other hand, during summer months a small tree in the rear garden would shield part of the array when seen from the conservatory and the area of garden close to the house, and would filter views during the winter. Although this vegetation would not restrict views from the first floor bedroom, it is the furthest turbines that would be most directly in view from within the house. Views from the front of the house would be unaffected. I reach the same overall conclusion as at Alwinds – the change in outlook would be dramatic and, in some views, unavoidable, but not overpowering or unpleasantly overwhelming. The other two properties on Toseland Road with direct views would be slightly less affected as a result of greater screening by buildings, other structures and vegetation.

103. College Farm is a modern bungalow and outbuildings situated in open countryside towards the western edge of the plateau. The full array of 8 turbines would be located on the horizon to the north and east of the property, covering an arc of about 60°. The nearest turbines would be 680m, 780m and 990m away, while the distance to the furthest would be just over 1.7km. I saw on my visit that windows on the rear elevation of the bungalow and the main area of private garden would have views towards the wind farm, albeit restricted by ornamental trees which would partly screen the nearest turbines in summer (though less so in winter). Other elevations of the bungalow would be minimally affected, if at all. The extensive curtilage would be subject to varying degrees of visibility, with some areas having greater exposure to the turbines than the enclosed rear garden.

104. As one occupier of College Farm acknowledged, the property benefits from largely unencumbered 360° panoramic views across the open countryside. The development would clearly represent a major and dramatic change in outlook, but this would be restricted to one sector of the panorama at sufficient distance not to be overpowering. I recognise the particular sensitivity of views to the rear, though visibility of the turbines would be less during the summer when the garden is likely to be used most. It is also pertinent that the wind farm would sit comfortably within the open landscape of the plateau – clearly a modern and contrasting addition, but not inherently out of place given the large scale of the setting. In these circumstances I consider that the development would not have an unpleasantly overwhelming impact on those living at College Farm.

105. The other dwellings which, in CFA's opinion, would be worst affected are further away from the nearest turbine and most do not have such direct views as those considered above. In Toseland, views from Toseland Hall north to the nearest turbine would largely be shielded by vegetation in the rear garden, while views from the west elevation would be at an acute angle and much greater distance. Broadly similar considerations apply to dwellings fronting High Street – intervening buildings and/or vegetation would restrict ground

floor views (at least) from most properties, including The Limes and East Farm, and in any event the 1km or more distance to the nearest turbine is sufficient to ensure that the development would not dominate the outlook. Green Farm would be slightly closer, but substantial outbuildings would hide the turbines in most views. The most significant effect in Toseland is likely to be experienced at The Green, which has an open aspect towards the site from the rear, but the distance (about 1.1km) and the relatively narrow arc of vision at an angle to the direct outlook would ensure that the impact would not cause a significant loss of amenity.

106. The occupiers of some modern houses on the eastern edge of Great Paxton have views across the open farmland on which the wind farm is proposed. A few would have direct views towards the turbines, on slightly higher ground, at a distance of about 1.1km to the nearest turbine and 2.4km to the furthest. The impact would be significant, though because of the separation distance, the large scale of the landscape, and the orderly arrangement of turbines across a relatively narrow arc of vision, the development would not appear unduly dominant. A similar effect would be felt by the occupiers of properties on the southern edge of Offord D'Arcy, though the greater separation distance (1.7km to the nearest turbine) means that the impact would be somewhat reduced. Some properties on the western edge of Yelling would have largely unobstructed views across the expansive plateau landscape to two distinct clusters of turbines, representing a significant change in outlook. However, only a very small sector of the panoramic view would be affected, and at a distance of about 2km to the nearest turbine (and 3.2km to the furthest) the wind farm would be far from dominant and would not cause a substantial loss of visual amenity.

107. To summarise, the occupiers of many of the dwellings closest to the appeal site would experience a dramatic change in outlook as a result of the wind farm, which in some cases would be highly conspicuous in views from a main front or rear elevation. I am satisfied, however, that because of the separation distances involved, the arrangement of the turbines and the capacity of this wide, open landscape to accommodate such large structures, no occupier would be subject to such an "unpleasantly overwhelming presence" from the wind farm as to render the proposal unacceptable. That, to my mind, is the critical element of the test applied by the parties in this case. The impact of the development would diminish with increasing distance from the site, and whilst the effect on the outlook from some dwellings would still be substantial, the harm to occupiers would be appreciably less. Overall I conclude that the development would not cause unacceptable harm to the visual amenity of nearby residents.

RENEWABLE ENERGY

National level

108. At national level the commitment to renewable energy is strong, as set out in PCC and PPS22. PCC records the Government's belief that climate change is the greatest long term challenge facing the world today; addressing climate change is the principal concern for sustainable development. It recognises that planning has a pivotal and significant role in helping, amongst other matters, to

secure enduring progress against the UK's emissions targets and to create an attractive environment for bringing forward investment in renewable technologies.

109. Facilitating renewable energy developments through positive planning is seen by PPS22 as advancing all four elements of the Government's sustainable development strategy – social progress (by contributing to the nation's energy needs), protection of the environment (by reducing the potential of the environment to be affected by climate change), prudent use of natural resources (by reducing reliance on fossil fuels) and maintenance of economic growth and employment (by creating jobs in renewable energy and new technologies). Three of the key policy principles in PPS22 are particularly germane to this appeal. Key principle (i) states 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 (iv) indicates that the wider environmental and economic benefits of renewable energy projects, whatever their scale, are material considerations that should be given significant weight in determining whether proposals should be granted planning permission. Key principle (viii) requires development proposals to demonstrate any environmental, economic and social benefits as well as how any environmental and social impacts have been minimised through careful consideration of measures such as location, scale and design.

110. The Annual Energy Statement from DECC, published on 27 July 2010, is a recent statement of the Government's firm commitment to exploiting the UK's wealth of potential renewable energy resources. It points to the failure to exploit these resources in the past, as exemplified by the UK in 2007 having the lowest contribution from renewables of any major EU country, ahead of just Malta. Moreover, the Government has signalled its intention to increase the target for energy from renewable resources, subject to the advice of the Climate Change Committee, and to support an increase in the EU greenhouse gas emission reduction target from 20% to 30% by 2020.[7] Thus the drive towards a low carbon economy, of which renewable energy remains a vital component, is certainly not diminished – indeed, the signs are that it is greater than before.

111. The current scale of the challenge of meeting carbon budgets is illustrated in the Climate Change Committee's 2nd Progress Report to Parliament on 30 June 2010. The Committee re-iterates the conclusion it reached in its first report, which is that a step change in the pace of emissions reductions is required to achieve carbon budgets, notwithstanding the reductions that have resulted largely from the recession. In terms of renewable electricity generation capacity, the Report states that less than 1 gigawatt (GW) was deployed in 2009 compared to over 3GW required annually on average in the third carbon budget period. The accompanying table indicates that the main source of deployment in 2009 was onshore wind, but at 0.4GW this was substantially short of the 1.4GW pa required from this source to meet the Budget 3 average. The Report is consistent with the indications contained in the Climate Change Act 2008 and the 2009 Renewable Energy Strategy, which are that the

[7] From section 10 of *The Coalition: our programme for government*, and repeated in the Annual Energy Statement.

contribution from wind power will have to increase substantially if the legally binding targets for electricity from renewables are to be achieved.

112. CFA refers to the Climate Change Act 2008 expressing the Government's policy in terms of targets for reductions in CO_2 emissions. Because there is no direct relationship between installed capacity and energy production, it argues that installed capacity figures have become irrelevant. CFA points out that because the appellant has provided no evidence of the reduction in CO_2 emissions resulting from the wind farm, there is nothing to weigh in the benefit side of the balance. In its view the CO_2 savings would, at best, be small. It is clear to me, however, that progress and targets for renewable energy generation have generally been measured in terms of installed capacity; as the Climate Change Committee's recent report testifies, for wind energy that remains the position today. Therefore I am satisfied that the appropriate unit of assessment has been used in this case. In any event, PCC states that applicants for energy development should not be required to demonstrate the overall need for renewable energy, nor question the energy justification for siting a renewable energy proposal in a particular location.

113. In his corrected statement to the House of Lords on 27 July, Lord Marland indicated that:

"*Modelling for one scenario suggests that we would need a total of 14GW of onshore wind (and 12.5GW offshore) to help meet our 2020 targets. In the case of onshore wind, 3.5GW has already been built, with a further 5GW consented or under construction and 7.6GW in the planning system. On this basis, much of the onshore capacity needed to achieve this scenario is operating or in the pipeline (if it were all built).*"

It is reasonable to assume that the appeal proposal represents a small part of the 7.6GW of onshore wind that is "in the planning system". Whilst Lord Marland's statement does suggest, as CFA contends, that it is the intention to shift the future focus of wind energy offshore, the figures indicate that there is currently a sizeable gap in onshore provision between the 8.5GW built/ consented/under construction and the 14GW needed under that scenario. Lord Maitland's reference to much of the required onshore capacity being already operational or in the pipeline depends upon schemes such as the appeal proposal being permitted and built. Moreover, in his statement to Parliament on 27 July introducing the Annual Energy Statement, the Secretary of State for Energy and Climate Change suggested that, whilst the emphasis on renewables may in future be offshore, onshore opportunities (from which wind energy was not excluded) will continue to be harnessed.

Regional and local levels

114. The percentage targets for renewable energy given in EEP policy ENG2 are stated to equate to targets for installed capacity (excluding offshore wind) of 820 megawatts (MW) by 2010 and 1,620MW by 2020. By December 2009 436.5MW of onshore capacity had been installed in the region, a substantial shortfall against the 2010 target which, it was accepted at the inquiry, would not be met. Work on sub-regional targets was taken forward in a 2008 study commissioned by the Regional Assembly: *Placing Renewables in the East of England*. This study indicated that, in meeting 20% of the region's expected electricity consumption by 2020 from a range of renewable technologies,

1,064MW was anticipated from onshore wind. The study identified the Bedfordshire and Cambridgeshire Claylands landscape character area (within which the appeal site lies) as having potential for 210MW of installed capacity, the second highest of all character areas in the region.

115. At the local level, PCC states that planning authorities should provide a framework that promotes and encourages renewable and low-carbon energy generation, which may include the identification of suitable areas for renewable and low-carbon energy sources. HDC's *Wind Power* SPD, despite pre-dating PCC, provides such a framework. Core Strategy policy CS1 (the most up-to-date element of the development plan) seeks, amongst other matters, to maximise the opportunities for renewable and low carbon energy sources; the policy justification confirms that the SPD remains relevant. As previously indicated, the SPD identifies the South East Claylands as having high capacity for accommodating a wind farm of the scale proposed, subject to certain criteria being satisfied.

Contribution from proposed development

116. The proposed wind farm would have a generating capacity of between 16 and 24 MW (depending on the capacity of the turbine ultimately selected), giving it the capability to supply an estimated 11-16% of the annual power needs of all households in Huntingdonshire. Thus it would make a small but significant contribution to the national annual average requirement and to the regional target. In the context of (i) a Government which is strongly committed to renewable energy, (ii) clear indications that the pace of CO_2 emissions reductions will have to increase substantially if binding targets are to be met, and (iii) the likelihood that onshore wind energy continues to have a role in achieving such reductions, I consider that the PPS22 key principle of attaching significant weight to the wider environmental and economic benefits of the appeal proposal is apposite. It is also highly pertinent that the appeal site is within an area identified at the regional and local levels as being suitable for a wind farm, notwithstanding that consideration must be given to a range of local impacts.

117. Although, in future, the Government intends to switch the focus from onshore to offshore wind energy generation, the latest figures indicate that at national level there is currently a need for additional permissions to be granted for onshore provision if the anticipated contribution of wind energy to the 2020 targets is to be met. That conclusion is reached without consideration of the regional dimension. Thus irrespective of what happens to (i) regional targets in the East of England Plan and (ii) the assessments made at regional level of the potential for renewable energy, the renewable energy benefits of the proposal carry significant weight. The facts that there is a substantial shortfall against the EEP 2010 target, and that the area is recognised at both regional and local levels as having potential for wind turbine development of the scale proposed, add further weight to the proposal.

OTHER MATTERS

Public safety

118. CFA and some local residents are worried about the physical risks to the

public and landowners from the operation of the wind farm as a result of rotor failure, the collapse of turbines, turbine fire, or icing of the blades. However, there is no public access to the appeal site. Apart from two public footpaths that terminate on the site boundary close to turbine 3, and which are little used because they do not lead anywhere, the footpath network would be at least 350m from the nearest turbine. The nearest bridleway would be even further away, beyond the minimum separation distance recommended by the British Horse Society, and there is no reason to suppose that the turbines would cause undue distress to horses or pose significant risks to their riders. Nor am I persuaded that the development would have a significant adverse effect on the operation of the Landseer Stud, which is a very small racehorse breeding enterprise about 1km from the nearest proposed turbine.

119. The evidence suggests that occurrences of rotor failure, turbine collapse and so on are relatively infrequent events. The PPS22 Companion Guide advises that properly designed and maintained wind turbines are a safe technology, and that there has been no example of injury to a member of the public. Given the limited opportunities for the public and landowners to get close to the turbines, I consider that the physical risks arising from the wind farm would be very small.

Aviation

120. Gransden Lodge, from which Cambridgeshire Gliding Centre (CGC) operates, is an unlicensed aerodrome over 10km from the nearest proposed turbine and more than double the 4km consultation distance that is applied by the Civil Aviation Authority. Thus there is no requirement for CGC to be consulted about the proposal. In practice the Council did directly consult CGC on the planning application, but no response was submitted. It appears that the current very late objection has arisen as a result of a difference of opinion among personnel at CGC. That in itself places doubts in my mind about the strength of the objection, for had there been a clear-cut cause for concern I would expect it to have been raised at the application stage. Nevertheless I have carefully considered the points made by CGC and the responses of the appellant.

121. CGC is mainly concerned that the wind farm proposes a potential hazard to safe aerial navigation by reducing the safety margin for flights returning to Gransden Lodge over Graveley, and more especially for a glider pilot who is seeking a safe landing place in the event of having insufficient height to return to the aerodrome. However, with gliders typically flying over the site at 1,500 to 2,000 feet, I am satisfied that there is sufficient safety margin above the 500 feet minimum clearance that is required above the turbine height of 587 feet above sea level. As to pilots who are at lower altitude and looking for a place to land, it is likely that the need to find a site will have been known for some time and, given the open and large scale pattern of agricultural land in the wider area, I do not believe that the presence of the wind farm would cause a significant problem. And whilst the wind farm would reduce the options for landings under competition conditions, when air traffic is increased, it seems to me that a competitor is likely to have attained a sound level of proficiency and should have little difficulty in avoiding the wind farm if that proves necessary. Overall, given the substantial distance between the appeal site and the aerodrome, I consider that the increased risk to air safety would be minimal.

Property values

122. Some nearby residents are worried about a possible loss of property value as a result of the development. Whilst I sympathise with such concerns, it is the case that many planning decisions have some effect on property values. Government advice in *The Planning System: General Principles* states that the planning system does not extend to protecting the private interests of one person against the activities of another. The material question is not whether owners of nearby property might suffer financial or other loss, but whether the development would unacceptably affect amenities and the existing use of land that ought to be protected in the public interest. In this case I have concluded that the loss of visual and residential amenity does not fall below the threshold of acceptability. Consequently I do not believe that there is a wider public interest that merits protection.

Other considerations

123. CFA makes the point that the Government's intention to revoke regional strategies (as is now the case) is associated with its commitment to return decision making powers on planning to local Councils working with local communities. It is clear that there is widespread local opposition to the wind farm, amply illustrated by CFA's thorough involvement in the inquiry. Yet it remains an important principle of the planning system that decisions must be based on material planning considerations, that is considerations which are related to the development and use of land in the public interest. *The Planning System: General Principles* makes clear that local opposition or support is not in itself a ground for refusing or granting planning permission unless it is founded on valid planning reasons.

124. I have given very careful consideration in this decision to the views of the local communities. Most of their arguments were directed to the main issues I have identified, and I have based my conclusions on the planning merits of the various cases put to me. A wide range of other concerns were raised by individuals and groups opposed to the development, and I have taken all the representations into account in reaching my decision. Many of these matters were investigated in the Environmental Statement. Where necessary, I am satisfied that appropriate mitigation would be achieved through planning conditions.

BALANCE OF CONSIDERATIONS

125. As indicated at the outset, the decision in this case turns on the balanced judgement that has to be made between the benefits of renewable energy production and the adverse effects on the heritage assets, the landscape and people in the surrounding locality.

126. Dealing firstly with heritage assets, I have found that the height and movement of the nearest turbines would cause some harm to the setting of the highly valued Toseland Hall. In applying PPS5 policy, I consider that the harm to the significance of the asset would be relatively small as a result of the clear dissociation between the modern wind farm and the historic building, and the fact that the harm would be limited to specific aspects of the aesthetic value of the asset, leaving its evidential and historical values unaffected. Of the many

other listed buildings in the surrounding settlements, some are the most highly valued (grade I) heritage assets. The wind farm would have minimal effect on all their settings as a result of the separation distances and the fact that no building exerts a commanding presence over a wide area. There would be no material harm to the significance of the nearby medieval moated SAM, the prime value of which is the evidence buried in the ground. The character and appearance of the surrounding conservation areas and the registered park and garden would be preserved.

127. It is inevitable that wind turbines of the great height proposed would give rise to a change of major significance in the local landscape. The appeal site is part of an area identified by HDC as having a high capacity to accommodate a group of turbines of the number and size proposed, however, and the specific location and layout of the development would satisfy the stated criteria. Consequently the large scale and man-made landscape of this lowland plateau, characterised by extensive arable fields bounded by sparse vegetation, would not be dwarfed by the turbines. Instead, from all public locations (apart perhaps from a couple of little used footpaths) the turbines would appear to be capably assimilated into the landscape and, to the extent that their impact would be perceived as adverse, the harm would be limited. Crucially, the impact would be within the limits envisaged by the broad policy framework.

128. I find no compelling evidence that the living conditions enjoyed by those living in the vicinity of the wind farm would be significantly diminished. In terms of noise, the objective of Government policy in ETSU-R-97 is to strike a balance which offers a reasonable degree of protection to local residents whilst not unduly constraining wind farm development. The appeal proposal has been thoroughly tested against the ETSU-R-97 criteria and, in general, has been found to comply. In the few areas of non-compliance I am satisfied that the methodologies adopted are appropriate and consistent with the principles of the guidance. Conditions which reflect current best practice would be imposed to limit noise and other potential adverse effects. Indeed, the adoption of lower noise limits at the inquiry than were contemplated at the application stage (and which HDC found to be acceptable), gives me confidence that nearby residents should not be subject to undue levels of noise.

129. The wind farm would be highly conspicuous from a main elevation of a small number of nearby dwellings, giving rise to a dramatic change in outlook. Nevertheless, because of the separation distances involved, the arrangement of the turbines and the capacity of the landscape to accommodate such large structures, I believe that no occupier would be subject to an unpleasantly overwhelming presence from the wind farm. A greater number of residents living further from the site would also have their outlook significantly affected, but the impact of the wind farm would diminish with increasing distance. Consequently the development would not cause unacceptable harm to the visual amenity of nearby residents.

130. A wide range of other concerns were raised by local residents and groups opposed to the development, but none of these matters add materially to the case against the proposal. In summary I conclude that the disbenefits of the proposal comprise (i) a relatively small amount of harm to the significance of the grade II* listed Toseland Hall and minimal adverse effects on other heritage assets, (ii) limited adverse effects to landscape character and visual

amenity, and (iii) impacts on the living conditions of nearby occupiers that, whilst significant, fall within normally accepted bounds.

131. The benefits of the proposal are the capability to supply an appreciable quantity of electricity from a renewable source which would make a small but significant contribution to the national requirement. The Government has made abundantly clear the urgency of the need to address the challenge of climate change. Moreover, the recent indication that the target for energy from renewable resources is likely to be increased, the support for an increase in the EU greenhouse gas emission reduction targets by 2020, and the Climate Change Committee's conclusion that a step change in the pace of emissions reductions is required to achieve carbon budgets, all add weight to the urgency of the need. The proposed wind farm has the potential to be one of the many individual building blocks required to meet that challenge and to help secure the wider environmental, social and economic benefits that flow from the Government's sustainable development strategy. The significant shortfall against the 2010 regional target, and the identification of the wider area as a location with potential for wind turbine development, add further weight to the benefits of the scheme.

132. In carrying out the balancing exercise it is important to reflect on the planning policies that provide the basis for the assessment in this case. PPS5 policy HE10 requires a proportionate approach to the weighing of harm against benefits, with the greater the negative impact on the heritage asset, the greater the benefits that will be needed to justify approval. In this case I believe that the relatively small amount of harm to the significance of the grade II* listed Toseland Hall, and the minimal effect on other assets, is clearly outweighed by the benefits of an appreciable quantity of electricity from a renewable source.

133. The other disbenefits of the proposal are also of limited magnitude, for the adverse effects on landscape character and visual amenity are nonetheless compliant with the local policy framework, and the impacts on residential amenity, whilst significant, would not cause undue harm. In terms of PPS22, the overall thrust of key principles (i), (iv) and (viii) is again to seek a balance, giving significant weight to the wider environmental and economic benefits of renewable energy provided environmental, economic and social impacts have been minimised and satisfactorily addressed. Given my conclusions that the landscape and residential amenity impacts are acceptable, and that there are no other concerns that add materially to the case against the proposal, the overall harm (including that to heritage assets) would remain relatively small. This has to be set against the significant weight which should be given to the benefits that flow from the supply of renewable energy. Taking all these matters into account, I find that the balance weighs in favour of the proposal.

134. As to the weight which should be given to the ministerial statements about intended revocation of regional strategies prior to the judgement in the second *Cala Homes* challenge, whatever weight is applied does not alter the decision. The Government's strong commitment to a range of renewable energy technologies which include onshore wind, coupled with the urgency of the situation in terms of meeting national targets, is sufficient to clearly outweigh the relatively limited harm I have identified. The substantial shortfall against

regional targets adds further weight to this conclusion, but is not determinative.

CONDITIONS

135. I have considered the conditions suggested by the Council in the light of the discussion at the inquiry and the advice in Circular 11/95. The suitability and form of the noise condition, and the arguments for and against an "excess AM" condition, have already been discussed. Because the application is made for a 25 year period, it is necessary to ensure that decommissioning and site restoration take place at the end of this period; similarly, if an individual turbine should fail to operate, its removal is also necessary. For reasons of residential amenity and/or highway safety, appropriate methodologies and management plans are required to be operational during the construction phase, including any necessary highway repairs following construction. In the interests of proper planning I have added a condition which identifies the plans to which this permission relates.

136. Because the application is based on a typical "candidate" turbine which may no longer be available at the time of implementation, it is necessary for details of the selected turbine and ancillary apparatus and buildings to be agreed by the local planning authority. The candidate turbine has a maximum height to blade tip of 127m and a hub height of 82m; as these parameters formed the basis of the assessment in the ES, I accept that it is necessary to include some limitations on height whilst allowing for a degree of flexibility. I agree that the overall limit of 127m should be stipulated, and I consider that a margin of 5m either side of the hub height is appropriate. In the interests of visual amenity, it is necessary to ensure that the turbine blades rotate in the same direction.

137. As to micro-siting, I believe it is necessary for the local planning authority to approve all but the smallest (ie under 10m) variations in turbine siting prior to erection, primarily to give control over separation distances and thereby minimise the potential "excess AM" risk factor of turbines being too close together.[8] In addition, for air safety reasons, confirmation of the location of each turbine and the height of the highest structure should be provided to the Council prior to erection. I agree that it is necessary to preclude the movement of turbine 7 in the direction of the SAM (to limit the impact on this designated heritage asset) and of turbine 8 towards residential properties in Graveley (to limit the impact on residential amenity); additionally, I consider that turbines 1 and 3 should not be sited closer to College Farm, again to protect residential amenity. Also for this reason it is necessary to establish schemes to deal with any incidences of shadow flicker and television interference that may arise as a result of the development.

138. To protect wildlife, it is necessary for surveys to be carried out prior to construction to check for the presence of nesting birds and other protected species, and for appropriate mitigation to be implemented. In view of the lack of evidence that bird or bat kill is likely to be a significant problem at this location, I do not consider that post-construction monitoring is necessary. To

[8] For example, a possible consequence of applying a 30m micro-siting tolerance to turbines 4 and 6 is that the separation distance could reduce from 345m to 285m, significantly below the desirable distance of 360m.

ensure appropriate landscape enhancement in the interests of visual amenity, a landscape and habitat management scheme should be agreed with the local planning authority.

CONCLUSION

139. For the reasons given above I conclude that the appeal should be allowed.

Martin Pike

INSPECTOR

APPEARANCES

FOR THE LOCAL PLANNING AUTHORITIES:

Tina Douglass of Counsel	instructed by Mr C Meadowcroft, Head of Estates, Huntingdonshire District Council
She called	
Mrs L Brown BSc(Arch) BArch MTP	Conservation Team Leader, Huntingdonshire District Council
Mrs C Newell BAHons(Arch) RIBA IHBC	Principal Conservation Officer, South Cambridgeshire District Council
Mrs J Parsons BA(Hons) DipUD MRTPI	Development Management Team Leader, Planning Services, Huntingdonshire District Council

FOR THE APPELLANT:

David Hardy LLB(Hons) BCL(Hons)	Partner, Cobbetts LLP
He called	
Mr J Stevenson MA MPhil DipED CMLI MRTPI MInstEnvSci FRGS	Principal, Jeffrey Stevenson Associates Ltd
Dr J Edis BA(Hons) MA PhD MIFA IHBC	Director and Head of Historic Buildings, CgMs Ltd
Dr A Bullmore BSc PhD MIA	Managing Partner, Hoare Lea Acoustics
Mr P Dixon MA MRICS MEI CEnv	Director, Savills

FOR COTTON FARM ALLIANCE:

David Cocks QC	instructed by Ashfords Solicitors
He called	
Mrs C Brockhurst BSc(Hons) DipLA FLI	Director, Tyler Grange Ltd
Mrs J Davis MA RN RM RHV	Resident of Deeping St Nicholas, Lincolnshire
Mrs L Harlock	Resident of Warboys, Cambridgeshire
Mr M Stigwood DipANCE MIOA FRSPH	Principal, MAS Environmental
Mr K McConnell	Chairman, Graveley Parish Council
Dr C Hanning BSc MB BS MRCS LRCP FRCA MD	Honorary Consultant, Leicester NHS Trust
Dr P Bratby BSc PhD ARCS	Energy Consultant

INTERESTED PERSONS:

Mr D Moore	Local resident
Mr J Gimblett	Vice Chair, Offord Cluny & Offord Darcy Parish Council

Ms I Williams	Landseer Stud
Mr A Carver	Fleet Commercial Services Ltd
Mr K Holl	Local resident
Dr R Harman	Local resident
Mr B Moore	Local resident
Mr C Wallace	Local resident
Mrs K Giles	Chair, Great Paxton Under Fives Association
Mr S Peck	Local resident
Mr J Hancox	Local resident
Mrs A Barber	Local resident
Dr P Simpson	Reader in Social History of Art, University of Hertfordshire
Mr R Brickwood	Chairman, Cambridge Gliding Centre
Mr D Lee	Local resident
Mr J Wheeler	Local resident
Mr M Thody	Local resident
Cllr R West	Cambridgeshire County and Huntingdonshire District Councillor
Cllr B Boddington	Huntingdonshire District Councillor
Cllr M Smith	Cambridgeshire County Councillor
Cllr N Wright	South Cambridgeshire District Councillor

DOCUMENTS SUBMITTED AT THE INQUIRY

1 Opening statement of Appellant
2 Opening statement of Huntingdonshire DC
3 Opening statement of Cotton Farm Alliance
4 Statement of David Moore
5 List of worst affected properties from Mrs Brockhurst
6 Statement of John Gimblett
7 Appeal decision APP/F2415/A/09/2109745 Low Spinney Farm, Ashby Magna
8 APP/E2001/A/09/2101421 Sober Hill Wind Farm, E Riding of Yorkshire – Inspector's report
9 APP/E2001/A/09/2101421 Sober Hill Wind Farm, E Riding of Yorkshire – Secretary of State decision
10 Aerial photograph of part of Toseland
11 Statement of Irena Williams
12 Statement of Andrew Carver
13 Statement of Risa Harman
14 Statement of Keith Holl
15 Draft noise conditions
16 Note about Cotton Farm land ownership and financial involvement
17 Supplementary information to statement of Jane Davis
18 Planning permission for Red Tile wind farm, Warboys - Ref:0302827FUL
19 Statement of Bryan Moore
20 Correspondence from Andrew Lansley MP and Jonathan Djanogly MP
21 High Court judgement: *Tegni Cymru Cyf v The Welsh Ministers*, CO/15904/2009
22 Extract from Planning Policy for Wales TAN 8: *Planning for Renewable Energy*
23 Appeal decision APP/A2525/A/02/1099738, Deeping St Nicholas wind farm

24 Statement of Pat Simpson
25 Statement of Craig Wallace
26 Extract from proof of evidence of Malcolm Hayes to Coronation Power wind farm inquiries
27 Statement of Katie Giles
28 Statement of Stephen Peck
29 Statement of John Hancox
30 Extract from BWEA Report: England's regional renewable energy targets
31 CFA amendment to draft noise conditions
32 CFA amendment to draft noise conditions – 10m measured wind speed
33 Letter from RWE Npower Renewables to Mr P Bailey, Cotton Farm
34 Letter from Warrens Boyes & Archer, solicitors for R C Eayrs Ltd
35 Extracts from internet postings of Dr Phillip Bratby
36 Statement of Alison Barber
37 Appellant's diagrams concerning South East Claylands character area
38 Highways Agency information on A14 improvement
39 Photograph of Graveley airfield
40 Extracts from South Cambridgeshire Development Control Policies DPD
41 Correspondence between Appellant and Council concerning footpaths
42 South Cambridgeshire Development Control Policies DPD, Chapter 8 – Cultural Heritage
43 Extract from PPS3 Annex B: Definitions
44 Statement of Richard Brickwood
45 Statement of David Lee
46 Supplementary statement of Bryan Moore
47 Statements of John Wheeler
48 Letter from Nuon Renewables to Harborough DC – Swinford wind farm
49 CFA Note on sections of Mr Stigwood's evidence no longer relied on
50 Revised list of draft conditions
51 Extracts from Epilepsy Action website
52 Extracts from accountant's report for Landseer Stud
53 Supplementary statement of Risa Harman
54 Supplementary statement of John Wheeler
55 Statement of Marvyn Thody
56 Written statement of Mr S Matthews (not read)
57 Written statement of Mr K Woodger (not read)
58 Statement of Richard West
59 Statement of Barbara Boddington
60 Statement of Mandy Smith
61 Statement of Nicholas Wright
62 Agreed ecology condition
63 Revised Statement of Common Ground - Noise
64 Closing submissions – Cotton Farm Alliance
65 Closing submissions – Huntingdonshire DC
66 Closing submissions – Appellant
67 Written representations June 2010 – Cambridgeshire Gliding Club
68 Written representations June to October 2010 – Cotton Farm Alliance
69 Written representations June to August 2010 – Huntingdonshire DC
70 Written representations June to October 2010 – Appellant

PLANS

Plan A Site Plan – drawing REN/COT/0003/A
Plan B Anemometry mast – drawing REN/COT/0001/A
Plan C Indicative turbine elevations – drawing REN/COT/0002/A
Plan D Access track cross section – drawing REN/COT/0005/A
Plan E Substation area layout – drawing REN/COT/0006/A
Plan F Access from Toseland Road – drawing REN/COT/0007/B
Plan G Temporary 87m anemometry mast – drawing REN/COT/0009/A
Plan H Substation plan and elevations – drawing REN/COT/00010/A
Plan I Road survey plan

SCHEDULE OF CONDITIONS

Time Limits and Site Restoration

1) The development hereby permitted shall begin not later than three years from the date of this decision.

2) The development hereby permitted shall be carried out in accordance with the following approved plans (all prefaced REN/COT/): 0001/A, 0002/A, 0003/A, 0005/A, 0006/A, 0007/B, 0009/A, 0010/A.

3) The permission hereby granted shall expire no later than 25 years from the date when electricity is first exported from any of the wind turbines to the electricity grid network ("First Export Date"). Written confirmation of the First Export Date shall be provided to the Local Planning Authority no later than 1 calendar month after the event.

4) Not later than 12 months before the expiry of this permission, a decommissioning and site restoration scheme shall be submitted for the written approval of the Local Planning Authority. The scheme shall make provision for the removal of the wind turbines and the associated above ground equipment and foundations to a depth of at least one metre below ground. The scheme shall include the management and timing of any works, a traffic management plan to address likely traffic impact issues during the decommissioning period, an environmental management plan to include details of measures to be taken during the decommissioning period to protect wildlife and habitats, identification of access routes, location of material laydown areas, restoration measures and a programme of implementation. The approved scheme shall be fully implemented within 24 months of the expiry of this permission.

5) If any of the turbines hereby permitted fails to operate for a continuous period of 6 months, a scheme shall be submitted to the Local Planning Authority for its written approval within 3 months of the end of that 6 month period for the repair or removal of the relevant turbine. The scheme shall include as relevant a proposed programme of remedial works where repairs to the relevant turbine are required; a method statement and timetable for the dismantling and removal of the relevant turbine and associated above ground works and foundations to a depth of at least 1 metre below ground; and a method statement and timetable for any necessary restoration works following removal of the turbine. The scheme shall thereafter be implemented in accordance with the approved details and timetable.

Construction

6) Prior to the commencement of development a Construction Traffic Management Plan shall be submitted for the approval in writing of the Local Planning Authority. The Construction Traffic Management Plan shall include proposals for the routing of construction traffic, scheduling and timing of movements, the management of junctions to and crossings of the public highway and other public rights of way, details of escorts for abnormal loads, temporary warning signs, temporary removal and replacement of highway infrastructure/street furniture, reinstatement of any signs, verges or other items displaced by construction traffic and

banksman/escort details. The approved Construction Traffic Management Plan including any agreed improvements or works to accommodate construction traffic where required along the route, shall be carried out as agreed in writing by the Local Planning Authority.

7) Prior to the commencement of development a Construction Method Statement shall be submitted for the approval in writing of the Local Planning Authority. Thereafter, the construction of the development shall only be carried out in accordance with the approved Statement, subject to any variations approved in writing by the Local Planning Authority. The Construction Method Statement shall address the following matters:
   (a) Details of the phasing of all construction works.
   (b) Details of the construction and surface treatment of all hard surfaces and tracks.
   (c) Details of the proposed storage of materials and soils and disposal of surplus materials.
   (d) Dust management.
   (e) Siting and details of wheel washing facilities.
   (f) Details of the proposed temporary site compound for storage of materials and machinery (including areas designated for car parking).
   (g) The construction of site access and the creation and maintenance of associated visibility splays.
   (h) Cleaning of site entrances, site tracks and the adjacent public highway and the sheeting of all HGVs taking spoil or construction materials to/from the site to prevent spillage or deposit of any materials on the highway.
   (i) Pollution control: protection of water environment, bunding of fuel storage areas, surface water drainage, sewage disposal and discharge of foul drainage.
   (j) Proposals for post construction restoration/reinstatement of the temporary working areas and track shoulders and crane pads.
   (k) Details of emergency procedures and pollution response plans.
   (l) A site environmental management plan to include details of measures to be taken during the construction period to protect wildlife and habitats.
   (m) Site illumination during the construction period.
   (n) Details of the routing of underground cables.

8) Construction work shall only take place between the hours of 07:00 – 19:00 on Monday to Friday inclusive, 08:00 – 13:00 hours on Saturdays with no construction work on a Sunday or Public Holiday. Outside 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 occurrence.

9) The delivery of any construction materials or equipment for the construction of the development, other than turbine blades, nacelles and towers, shall be restricted to the hours of 07:00 – 19:00 on Monday to Friday inclusive, 08:00 – 13:00 hours on Saturdays with no such deliveries on a Sunday or Public 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.

Appearance

10) Prior to the erection of any turbine, details of the dimensions, finish and colour of the wind turbines and any external transformer units and of the finish and colour of the meteorological mast shall be 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 or any external transformer units or the meteorological mast other than those required to meet statutory health and safety requirements. The development shall be carried out as approved and thereafter be retained in accordance with the approved details.

11) The overall height of the wind turbines shall not exceed 127m to the tip of the blades when the turbine is in the vertical position as measured from natural ground conditions immediately adjacent to the turbine base. The hub height of the wind turbines shall be between 77m and 87m.

12) All wind turbine blades shall rotate in the same direction. The turbines shall not be illuminated and there shall be no permanent illumination on the site other than lighting required during the construction period, during planned or unplanned maintenance or emergency lighting, and PIR-operated external door light for the substation building door to allow safe access.

13) Construction of the substation building shall not commence until details of the external appearance, dimensions, layout and materials of that building and any associated compound or parking area, and details of surface and foul water drainage from the substation building and any associated compound or parking area have been submitted to and approved in writing by the Local Planning Authority. The development shall be constructed in accordance with the approved details.

14) All cabling between the turbines and between the turbines and substation shall be laid underground.

Highways

15) Prior to the commencement of development a scheme to secure any repairs to the length of the road shown on the attached plan titled "Road Survey Plan" required as a consequence of the development shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall contain proposals for a visual/video survey of the length of road shown on the "Road Survey Plan" and a programme and methodology for any necessary repairs following the completion of construction. The scheme shall be implemented as approved.

Micro-siting

16) The turbines and meteorological mast hereby permitted shall be erected at the following coordinates:

TI	522481	264077
T2	522914	264370
T3	522835	263892

T4	523246	264223
T5	523137	263677
T6	523536	264039
T7	523480	263526
T8	523860	263892
Meteorological mast	522974	263600

Notwithstanding the terms of this condition, the turbines and meteorological mast may be micro-sited within 30 metres of the coordinates set out in this condition, subject to the details of any variation greater than 10m from the coordinates being submitted to and approved in writing by the Local Planning Authority prior to erection. Turbines 1 and 3 shall not be micro-sited to the south-west to a position closer to College Farm, Turbine 7 shall not be micro-sited to the south-east to a position closer to the Moated Site in Toseland Wood Scheduled Ancient Monument and Turbine 8 shall not be micro-sited to the east to a position closer to the village of Graveley. For the avoidance of doubt, the consequential realignment of the access tracks between and to the turbines following micro-siting of the turbines in accordance with this condition is permitted. A plan showing the position of the turbines and tracks established on the site shall be submitted to the Local Planning Authority within one month of the First Export Date.

Archaeology

17) No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the Local Planning Authority. The scheme shall include timetabled provision for a nominated archaeologist to be given access to undertake a "watching brief" during the excavation of access tracks, hedgerow openings, turbine foundations and other operational areas of the development site during the construction phase. The scheme shall include provision for remains to be recorded, removed or left in situ. The approved scheme of investigation shall be implemented subject to any variations approved in writing by the Local Planning Authority.

Ecology and Landscape

18) Prior to the commencement of development, a specification for checking surveys for nests of breeding birds on the development site to be carried out by a suitably qualified independent ecologist shall be submitted to and approved in writing by the Local Planning Authority. The specification shall include the methodology for the surveys, and a timetable for the checking surveys and submission for a report detailing the results of the survey. The report shall also identify any mitigation measures required as a result of the survey for any construction works or clearance of vegetation between 1 March and 31 August. The specification and mitigation measures shall be implemented as approved.

19) Prior to the commencement of development a Landscape and Habitat Management Scheme shall be submitted for the consideration of and

approval by the Local Planning Authority. The scheme shall include a programme and details of new tree and hedgerow planting, the enhancement of existing hedgerows, the establishment of conservation headlands and details of replacement planting for trees and plants which become diseased or are destroyed or die within five years of the date of planting. The scheme shall be implemented as approved in writing by the Local Planning Authority.

20) Prior to the commencement of development a specification for protected species surveys to be carried out shall be submitted to and approved in writing by the Local Planning Authority. The surveys shall be undertaken by a suitably qualified ecologist in the last suitable season prior to site preparation and construction work commencing. The survey results and a programme of any mitigation works required shall be submitted to and approved in writing by the Local Planning Authority. The approved programme of mitigation works shall be implemented in full.

Shadow Flicker

21) Prior to the First Export Date a written scheme shall be 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 a dwelling (defined for the purposes of this condition as a building within Use Class C3 of the Use Classes Order) which lawfully exists or had planning permission at the date of this permission. The written scheme shall include remedial measures. Operation of the turbines shall take place in accordance with the approved protocol unless the Local Planning Authority gives its prior written consent to any variations.

Television Interference

22) Prior to the erection of any turbine, a scheme providing for a baseline survey and the investigation and alleviation of any electro-magnetic interference to terrestrial television caused by the operation of the turbines shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall provide for the investigation by a qualified independent television engineer of any complaint of interference with television reception at a dwelling (defined for the purposes of this condition as a building within Use Class C3 of the Use Classes Order) which lawfully exists or had planning permission at the date of this consent where such complaint is notified to the developer by the Local Planning Authority within 18 months of the First Export Date. Where impairment is determined by the qualified independent television engineer to be attributable to the wind farm, details of the mitigation works which have been approved in writing by the Local Planning Authority shall be implemented in accordance with the approved scheme.

Air Safeguarding

23) Prior to the erection of the first wind turbine, the developer shall provide written confirmation to the Local Planning Authority of the anticipated date of completion of construction; the height above ground level of the highest structure in the development and the position of each wind turbine in latitude and longitude.

Noise

24) The rating level of noise immissions 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 for the relevant integer wind speed set out in the Tables attached to these conditions and:

(A) Prior to the First Export Date the wind farm operator shall submit 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.

(B) 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, the wind farm operator shall, at its expense, employ a consultant approved by the Local Planning Authority, to assess the level of noise immissions from the wind farm at the complainant's property in accordance with the procedures described in the attached Guidance Notes. The written request from the Local Planning Authority shall set out at least the date, time and location that the complaint relates to. Within 14 days of receipt of the written request of the Local Planning Authority made under this paragraph (B), the wind farm operator shall provide the information relevant to the complaint logged in accordance with paragraph (H) to the Local Planning Authority in the format set out in Guidance Note 1(e).

(C) 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 selected 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 submitted for approval 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.

(D) Prior to the commencement of any measurements by the independent consultant 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 the Tables attached to these conditions or approved by the Local Planning Authority pursuant to paragraph (C) of this condition shall be undertaken at the measurement location approved in writing by the Local Planning Authority.

(E) Prior to the submission of the independent consultant's assessment of the rating level of noise immissions in accordance with paragraph (F), the wind farm operator shall submit to the Local Planning Authority for written approval a proposed assessment protocol setting out the following:

(i) the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immissions; and

(ii) a reasoned assessment as to whether the noise giving rise to the complaint contains or is likely to contain a tonal component.

The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request of the Local Planning Authority under paragraph (B), and such others as the independent consultant considers likely to result in a breach of the noise limits. The assessment of the rating level of noise immissions shall be undertaken in accordance with the assessment protocol approved in writing by the Local Planning Authority.

(F) 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 within 2 months of the date of the written request of the Local Planning Authority made under paragraph (B) unless the time limit is extended in writing by the Local Planning Authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set out in Guidance Note 1(e) of the Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with Guidance Note 1(a) and certificates of calibration shall be submitted to the Local Planning Authority with the independent consultant's assessment of the rating level of noise immissions.

(G) 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 21 days of submission of the independent consultant's assessment pursuant to paragraph (F)

above unless the time limit has been extended in writing by the Local Planning Authority.

(H) The wind farm operator shall continuously log wind speed, wind direction and rainfall data at the permanent meteorological monitoring mast erected in accordance with this consent, and shall continuously log power production, nacelle wind speed, nacelle wind direction and nacelle orientation at each wind turbine all in accordance with Guidance Note 1(d). 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 Guidance Note 1(e) to the Local Planning Authority on its request, within 14 days of receipt in writing of such a request.

For the purposes of this condition, a "dwelling" is a building within Use Class C3 of the Use Classes Order which lawfully exists or had planning permission at the date of this consent.

Table 1 - Between 07:00 and 23:00 - Noise level dB $L_{A90,\ 10\text{-minute}}$

Location	Standardised wind speed at 10 metre height (m/s) within the site averaged over 10-minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
Cotton Farm	40	40	40	40	40	40	40	42	45	47	50	52
Duck End Farm House	35	35	35	36	38	40	43	46	49	52	54	56
Green Acres	35	36	36	37	37	39	40	42	44	46	48	51
97 Toseland Road	35	36	36	37	37	39	40	42	44	46	48	51
College Farm	35	35	35	37	38	40	41	43	44	46	49	52
Bullens Farm	35	35	35	37	38	40	41	43	44	46	49	52
Hollow Farm	35	35	35	37	38	40	41	43	44	46	49	52
Green Farm	35	36	36	37	37	39	40	42	44	46	48	51
Great Parlow Close	35	35	35	35	35	37	40	42	45	47	50	52
Toseland Hall	35	36	36	37	37	39	40	42	44	46	48	51

Table 2 - Between 23:00 and 07:00 - Noise level dB $L_{A90,\ 10\text{-minute}}$

Location	Standardised wind speed at 10 metre height (m/s) within the site averaged over 10-minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
Cotton Farm	43	43	43	43	43	43	43	43	43	46	49	52
Duck End Farm House	43	43	43	43	43	43	43	46	49	53	55	57
Green Acres	43	43	43	43	43	43	43	43	43	46	49	52
97 Toseland Road	43	43	43	43	43	43	43	43	43	46	49	52
College Farm	43	43	43	43	43	43	43	43	43	44	47	51
Bullens Farm	43	43	43	43	43	43	43	43	43	44	47	51
Hollow Farm	43	43	43	43	43	43	43	43	43	44	47	51
Green Farm	43	43	43	43	43	43	43	43	43	46	49	52
Great Parlow Close	43	43	43	43	43	43	43	43	43	46	49	52
Toseland Hall	43	43	43	43	43	43	43	43	43	46	49	52

Table 3: Coordinate locations of the properties listed in Tables 1 and 2

Property	Easting	Northing
Cotton Farm	523940	264586
Duck End Farm House	524520	264310
Green Acres	524495	263849
97 Toseland Road	524431	263650
College Farm	522188	263468
Bullens Farm	521626	265019
Hollow Farm	522674	262412
Green Farm	523825	262750
Great Parlow Close	524126	265181
Toseland Hall	523480	262693

Note to Table 3: The geographical coordinates references are provided for the purpose of identifying the general location of dwellings to which a given set of noise limits applies.

GUIDANCE NOTES FOR NOISE CONDITION

These notes are to be read with and form part of the noise condition. They further explain the condition and specify the methods to be deployed in the assessment of complaints about noise immissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Note 3. Reference to ETSU-R-97 refers to the publication entitled "The Assessment and Rating of Noise from Wind Farms" (1997) published by the Energy Technology Support unit (ETSU) for the Department of Trade and Industry.

Note 1

(a) Values of the $L_{A90,10\text{-minute}}$ noise statistic should be measured at the complainant's property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the 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). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK adopted standard in force at the time of the measurements). Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.

(b) The microphone should be mounted at 1.2 - 1.5 metres above ground level, fitted with a two-layer windshield or suitable equivalent approved in writing by the Local Planning Authority, and placed outside the complainant's dwelling. Measurements should be made in "free field" conditions. To achieve this, the microphone should be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground at the approved measurement location. 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 and the measurements shall be undertaken at the approved alternative representative measurement location.

(c) The $L_{A90,10\text{-minute}}$ measurements should be synchronised with measurements of the 10-minute arithmetic average wind speed and with operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.

(d) To enable compliance with the conditions to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed in metres per second (m/s), arithmetic mean wind direction in degrees from north and rainfall data in each successive 10-minute periods by direct measurement at the permanent meteorological monitoring mast erected in accordance with the planning permission on the wind farm site. The mean wind speed data shall be 'standardised' to a reference height of 10 metres as described in ETSU-R-97 at page 120 using a reference roughness length of 0.05 metres. It is this standardised 10 metre height wind speed data which is correlated with the noise measurements determined as valid in accordance with Note 2(b), such correlation to be undertaken in the manner described in Note 2(c). 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-minutes period for each wind turbine on the wind farm. All 10-minute periods shall commence on the hour and in 10-minute increments thereafter synchronised with Greenwich Mean Time.

(e) Data provided to the Local Planning Authority in accordance with paragraphs (F) (G) and (H) of the noise condition shall be provided in comma separated values in electronic format.

Note 2

(a) The noise measurements should 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 in the conditions set out in the assessment protocol approved by the Local Planning Authority under paragraph (E) of the noise condition but excluding any periods of rainfall measured at the permanent meteorological mast erected in accordance with the planning permission on the wind farm site.

(c) Values of the $L_{A90,10\text{-minute}}$ noise measurements and corresponding values of the 10-minute ten metre height wind speed for those data points considered valid in accordance with Note 2 paragraph (b) shall be plotted on an XY chart with noise level on the Y-axis and wind speed on the X-axis. A least squares, "best fit" curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

Note 3

(a) Where in accordance with the approved assessment protocol under paragraph (E) of the noise condition, 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 is to be calculated and applied using the following rating procedure.

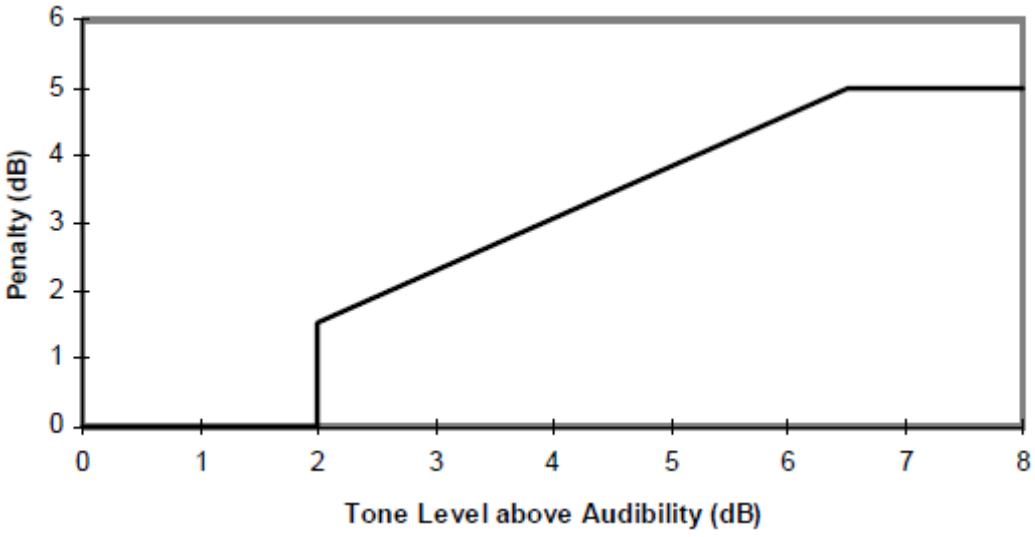
(b) For each 10-minute interval for which $L_{A90,10\text{-minute}}$ data have been determined as valid in accordance with Note 2 a tonal assessment shall be performed on noise immissions during 2 minutes of each 10-minute period. The 2-minute periods should be spaced at 10-minute intervals provided that uninterrupted uncorrupted data are available ("the standard procedure"). Where uncorrupted 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 standard procedure shall be reported.

(c) For each of the 2-minute samples the tone level above audibility shall be calculated by comparison with the audibility criterion given in Section 2.1 on pages 104 -109 of ETSU-R-97.

(d) The tone level above audibility shall be plotted against wind speed for each of the 2-minute samples. Samples for which the tones were 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 fitted to values within ± 0.5m/s of each integer wind speed. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Note 2.

(f) The tonal penalty is derived from the margin 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 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 above at each integer wind speed within the range set out in the approved assessment protocol under paragraph (E) of the noise condition.

(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 is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant's dwelling approved in accordance with paragraph (C) of the noise condition, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise immission only.

(d) The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant or Local Planning Authority 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 each integer wind speed within the range set out in the approved assessment protocol under paragraph (E) of the noise condition.

(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 integer wind speed.

(iv) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note (iii) above) at any integer wind speed 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 (C) of the noise condition then no further action is necessary. If the rating level at any integer wind speed 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 (C) of the noise condition then the development fails to comply with the conditions.