



Department for  
Communities and  
Local Government

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Our Ref: APP/D2510/A/11/2161066  
Your Ref: GRANGESA/176094/000001

27 March 2015

**TOWN AND COUNTRY PLANNING ACT 1990 – SECTION 78  
APPEAL BY MARK CAUDWELL LTD: LAND 7KM NORTH-WEST OF SKEGNESS  
AND 2KM SOUTH-WEST OF ORBY VILLAGE, EAST LINDSEY DC  
APPLICATION REF:N/084/00642/10**

1. I am directed by the Secretary of State to say that consideration has been given to the report of the Inspector, S R G Baird BA (Hons) MRTPI, who held a public local inquiry on 11 – 19 February 2014 and 1 – 3 October 2014 and which was closed in writing on 30 October 2014, into your client's appeal against a decision of East Lindsey District Council (the Council) to refuse planning permission for the installation and operation of a wind energy scheme comprising 9 wind turbines and ancillary infrastructure for a period of 25 years including external transformers, crane hardstanding and lay-down areas, control building and compound, switchgear on-site, access tracks and turning heads and ditch crossings, permanent monitoring met mast, site entrance, electrical cable connection, site signage and associated groundworks, in accordance with application N/084/00642/10, dated 23 March 2010.
2. On 5 June 2013, the appeal was recovered for the Secretary of State's determination, in pursuance of section 79 of, and paragraph 3 of Schedule 6 to, the Town and Country Planning Act 1990, because the appeal relates to proposals of major significance for the delivery of the government's climate change programme and energy policies.

**Inspector's recommendation and summary of the decision**

3. The Inspector recommended that the appeal be dismissed and planning permission refused. For the reasons given below, the Secretary of State agrees with the Inspector's recommendation. A copy of the Inspector's report (IR) is enclosed. All references to paragraph numbers, unless otherwise stated, are to that report.

## **Procedural matters**

4. The Secretary of State considers that the Environmental Statement (ES) which accompanied the application, together with the Supplementary Environmental Information (SEI) submitted under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 meet the requirements of the regulations (IR1.5) and provides the data and information required to adequately assess the impacts on the environment of the proposed development.

## **Events following the close of the Inquiry**

5. The Secretary of State is in receipt of a letter submitted following the close of the inquiry from the Rt Hon Sir Peter Tapsell MP dated 25 November 2014. The Secretary of State does not consider that this raises any new issues which would either affect his decision or require him to refer back to parties prior to determining the appeal. However, copies of his letter may be obtained on written request to the address at the foot of the first page of this letter.

## **Policy considerations**

6. In deciding this appeal, the Secretary of State has had regard to section 38(6) of the Planning and Compulsory Purchase Act 2004 which requires that proposals be determined in accordance with the development plan unless material considerations indicate otherwise.
7. In this case the development plan consists of the saved policies of the East Lindsey Local Plan First Alteration (LP) 1999; and the Secretary of State agrees with the Inspector that the most relevant policies are those detailed at IR4.26-4.29. Like the Inspector, the Secretary of State has had regard to the emerging East Lindsey Core Strategy (CS); and he agrees that the most relevant policies are those agreed in the Statement of Common Ground and described at IR4.30-4.33. In considering this appeal, the Secretary of State has also taken account of the Inspector's further consideration of planning and energy policy at IR12.107-12.113.
8. Other material considerations which the Secretary of State has taken into account include the National Planning Policy Framework (the Framework) and the associated planning practice guidance; and the Community Infrastructure Levy (CIL) Regulations 2010 as amended.
9. The Secretary of State has also had regard to the further national energy policies referred to by the Inspector at IR4.1-4.16, as well as other planning policy and guidance referred to at IR4.34-4.39. Furthermore, in accordance with section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990, the Secretary of State has paid special regard to the desirability of preserving listed structures or their settings or any features of special architectural or historic interest which they may possess.

## **Main issues**

10. The Secretary of State agrees with the Inspector that the main issues in this case are those set out at IR12.1.

### Landscape and visual impact

11. The Secretary of State has carefully considered the Inspector's conclusions on the effect of the proposed development on landscape and visual impact. For the reasons given at IR12.4-12.13 and IR12.15, the Secretary of State agrees with his conclusion at IR12.14 that the turbines, on their own, would not materially harm the landscape and enjoyment of the Lincolnshire Wolds AONB.
12. For the reasons given at IR12.16-12.26, the Secretary of State agrees with the Inspector's assessment of the cumulative landscape impact of the proposal. He agrees that whilst there would be a significant change in landscape character, it would not be unacceptably adverse (IR12.19). Furthermore, though there would be sequential views of the turbines, the mitigating influences of this large scale landscape and big skies, the compact nature of the Orby Marsh scheme and the various degrees of separation, the magnitude of that effect would be moderate and would not result in an impression of the area being saturated by turbines (IR21.26).

### The effect on living conditions

13. The Secretary of State agrees with the Inspector's evaluation of the impact of the proposed wind farm on living conditions by way of noise at IR12.28-12.49. He agrees that ETSU is currently the basis on which the noise impacts of wind farms should be assessed (IR12.33) and, having given careful consideration to the Inspector's discussion at IR12.34-12.38, he shares the Inspector's view that there is insufficient evidence to come to a firm conclusion that atypical road traffic noise has been appropriately accounted for in the noise assessment for the appeal. Therefore, taking account of the Inspector's further discussion at IR12.39-12.47, the Secretary of State agrees with the Inspector's conclusion at IR12.48 that it is reasonable to treat the results of the noise assessment and, as a consequence, the derived noise limits, with considerable caution; whilst also agreeing that the use of the equipment referred to at IR12.49 would not materially affect the setting of noise limits.
14. For the reasons given at IR12.50-12.70, the Secretary of State agrees with the Inspector's findings on construction noise (IR12.54); cumulative noise impacts (IR12.55-12.57); amplitude modulation (IR12.58-12.61); headroom (12.62-12.63); and residential visual impact (12.64-12.70). He therefore agrees with the Inspector's overall conclusions on living conditions at IR12.71-12.73. He agrees that, whilst many residents would experience a significant change in outlook, the degree of that would lessen with distance and would not be such that it would make the occupation of these dwellings or use of their external amenity areas unacceptable or unattractive places in which to live (IR12.71). However, with regard to the impact of noise, (IR12.72-12.73), the Secretary of State agrees with the Inspector that the approach adopted to the setting of daytime noise limits should be treated with considerable caution and that there is potential for the living conditions of residents in the area to be unacceptably affected at significant periods of the year when background noise levels are not affected by tourist related traffic on the C541.

### The effect on tourism

15. Having carefully considered the Inspector's assessment at IR12.74-12.76, the Secretary of State agrees with his reasoning and, accordingly, with his conclusion at IR12.76 that there is no evidence to suggest that this scheme would have a

materially adverse effect on tourism in East Lindsey or that that should be accorded weight in the overall planning balance.

### Other considerations

16. For the reasons given at IR12.77-12.84, the Secretary of State agrees with the Inspector's conclusions with regard to shadow flicker (IR12.77); public safety, flooding and health (IR12.78-12.80); property values (IR12.81); Ashley's Field (IR12.82); and television and internet reception (IR12.83-12.84). The Secretary of State is therefore satisfied that none of these factors needs to be weighed against the proposal in the overall planning balance. He similarly agrees with the Inspector's reasoning and conclusions with regard to horses (IR12.93), ecology (IR12.94-12.99); highway safety (IR12.100-12.101); alternative energy sources (IR12.102); and any potential impacts on human rights and localism (IR12.103-12.105).

### Cultural Heritage

17. The Secretary of State has carefully considered the Inspector's reasoning and conclusions at IR12.85-12.92. For the reasons given at IR12.91 he agrees with the Inspector's conclusion that the potential impact of the appeal scheme on the significance of Boothby Hall and its setting would be moderate and for the purposes of the balancing exercise required by paragraph 134 of the Framework the effect would be less than substantial; and he weighs it accordingly against the public benefits of the appeal proposal. For the reasons given at IR12.92, the Secretary of State also agrees with the Inspector that the effect on the significance of other heritage assets in the area would be less than substantial and should be weighted accordingly in the overall balance.

### **Conditions**

18. The Secretary of State has considered the Inspector's comments at IR11.2-11.6 and IR12.126-12.128 on the proposed planning conditions, along with the schedule of conditions he recommends at Annex A to the IR. The Secretary of State is satisfied that the proposed conditions are reasonable and necessary and would meet the tests of paragraph 206 of the Framework. However, he does not consider that the conditions would overcome his reasons for dismissing the appeal.

19. The Secretary of State has also considered the appellant's intention to issue a Unilateral Undertaking as identified at IR11.8-11.9 but, taking account of the terms of the Regulations, he agrees with the Inspector that he can attach no weight to this in the planning balance (IR11.10).

### **Planning Balance and Overall Conclusions**

20. The CO2 savings and energy contributions over the life of the scheme would be very valuable ones, with important social and economic benefits, and the Secretary of State considers that these benefits would outweigh the disbenefits caused to landscape and visual impact. Overall, however, the Secretary of State considers that adding in the concerns about the fundamental basis on which the noise limits for this scheme have been derived and the resultant potential for unacceptable harm to the living conditions of nearby residents for significant periods of the year, along with the need to give weight to the less than substantial harm which the scheme would cause to the heritage assets of the area, results in a significant shift

in the balance. He considers that, taken together, these would outweigh the benefits of the scheme when assessed against the policies of the Framework taken as a whole.

### **Formal Decision**

21. Accordingly, for the reasons given above, the Secretary of State agrees with the Inspector's recommendation. He hereby dismisses your client's appeal and refuses planning permission for the installation and operation of a wind energy scheme comprising 9 wind turbines and ancillary infrastructure for a period of 25 years including external transformers, crane hardstanding and lay-down areas, control building and compound, switchgear on-site, access tracks and turning heads and ditch crossings, permanent monitoring met mast, site entrance, electrical cable connection, site signage and associated groundworks in accordance with application N/084/00642/10, dated 23 March 2010 at Land 7km north-west of Skegness and 2km south-west of Orby Village.

### **Right to challenge the decision**

22. A separate note is attached setting out the circumstances in which the validity of the Secretary of State's decision may be challenged by making an application to the High Court within six weeks from the date of this letter.
23. Copies of this letter have been sent to East Lindsey District Council, Lincolnshire County Council, Orby Windfarm Action Group and Mrs A Smith. Notification has been sent to all other parties who asked to be informed.

Yours faithfully,

*Jean Nowak*

**Jean Nowak**

**Authorised by the Secretary of State to sign in that behalf**

# **Report to the Secretary of State for Communities and Local Government**

**by S R G Baird BA (Hons) MRTPI**

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

**Date: 2 February 2015**

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TOWN AND COUNTRY PLANNING ACT 1990

APPEAL BY

MARK CAUDWELL LIMITED

EAST LINDSEY DISTRICT COUNCIL

Inquiry held on 11 February 2014

File Ref: APP/D2510/A/11/2161066

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**File Ref: APP/D2510/A/11/2161066**

**Land 7km north-west of Skegness and 2km south-west of Orby Village.**

- 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 Mark Caudwell Limited against the decision of East Lindsey District Council.
- The application Ref N/084/00642/10, dated 23 March 2010, was refused by notice dated 18 March 2011.
- The development proposed is the installation and operation of a wind energy scheme comprising 9 wind turbines and ancillary infrastructure for a period of 25 years including external transformers, crane hardstanding and lay-down areas, control building and compound, switchgear on-site, access tracks and turning heads and ditch crossings, permanent monitoring met mast, site entrance, electrical cable connection, site signage and associated groundworks.

**Summary of Recommendation: The appeal be dismissed.**

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**1. Preliminary Matters**

- 1.1 A public inquiry was opened by Mr T Cookson in July 2012, adjourned and resumed in October 2012. Following new evidence on noise, the inquiry was adjourned until March 2013. Resumption of the inquiry was postponed and shortly thereafter Mr Cookson passed away. This resulted in the inquiry being re-run.
- 1.2 In June 2013, the Secretary of State (SoS), exercising his powers under S79 and paragraph 3 of Schedule 6 of the above Act, directed that, as the appeal involves a renewable energy development, he would determine it.
- 1.3 The inquiry opened on the 11 February 2014 and sat for 6 days. Afternoon and evening sessions were held in the Village Hall, Hogsthorpe on the 14 and 19 February. Following the submission of further evidence on noise, the inquiry was adjourned and resumed on Wednesday 1 October and sat for 3 days. The inquiry was adjourned on the 3 October and closing submissions were submitted in writing and the inquiry was closed in writing on 30 October 2014. Before the inquiry closed, the appellant submitted a draft S106 Unilateral Undertaking (UU) to provide for a Community Benefits Package and the parties were given an opportunity to comment.
- 1.4 At the opening of the inquiry the list of the plans that formed the planning application (highlighted in yellow) and those submitted for indicative purposes was agreed (Doc 1).
- 1.5 I have had regard to the Environmental Statement (ES) dated March 2010 (CD A2) and Supplementary Environmental Information (SEI) dated October 2010 (CD A7) submitted under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (EIA). I consider the information contained within the ES meets the requirements of the regulations.
- 1.6 The reason for refusal (RfR) refers to policies in the East Midlands Regional Plan 2009 (RSS) and Planning Policy Statement (PPS) 22. An Order to revoke the RSS came into force on 20 May 2013. PPS 22 was replaced by Planning Practice Guidance for Renewable and Low Carbon Energy in July



2013, which was replaced by Planning Practice Guidance (PPG) in March 2014.

- 1.7 The list of documents includes opening and closing submissions and proofs of evidence from the main parties. The proofs of evidence are as originally submitted and do not take account of how that evidence may have been affected by cross-examination or subsequent discussions and agreement between the parties. In reporting the cases for the main parties, I have used the opening and closing submissions as the basis for their cases.

## **2. The Proposal**

- 2.1 The scheme is for the erection of 9, three-blade wind turbines each with hub height of between 50m and 60m, a rotor diameter up to 62 m and subject to maximum blade tip height of 81m (Doc 1). A candidate turbine rated at 1.3MW has been used for the Environmental Impact Assessment purposes. Final turbine selection would be made following a competitive tendering process. Each turbine would have an external transformer kiosk and a 40m by 20m hardstanding (Doc 2 page 8).
- 2.2 Vehicular access to the site would be from Marsh Lane and the site served by some 5.7km of 5m wide on-site access tracks. An on-site control building would measure 14m by 5m and 6.1m high finished with brick or render walls and slate effect roof. A permanent lattice tower meteorological mast up to 55m high would be erected. Cabling between the turbines and the control building would be underground. Connection to the grid would be subject to a separate application or be subject to Local Electricity Distribution Network Operator's permitted development rights. The turbines and associated infrastructure would be subject to a micro-siting allowance of 25m. Temporary infrastructure would include a construction compound.
- 2.3 The construction phase would be approximately 6-9 months. The turbines would have an operational life of 25 years after which the site would either be re-powered (subject to the grant of a new planning permission) or decommissioned. If the site is decommissioned, the turbines and the upper sections of the turbine foundations would be removed and the site reinstated. The decommissioning phase would last approximately 3-6 months.

### **3. The Site and Surroundings**

- 3.1 The appeal site comprises some 22.3ha of gently undulating (0 to 5m AOD) arable agricultural land located between the sea, some 4 to 5km to the east and the Lincolnshire Wolds, some 4km to the west (CD A2 Volume 3 Figure 1-1). The site is north of Marsh Lane (C541) and to the west of South Ings Lane. On the opposite side of Marsh Lane, is Skegness Stadium used for car racing. The stadium is floodlit and has stands and banked areas for spectators. A short distance to the west, again on the south side of Marsh Lane, is a substantial grain store/drier. Both the stadium and the grain store/drier are prominent features in this part of the landscape.
- 3.2 The C541 Marsh Lane links the A158 Skegness Road to the south to Ingoldmells on the coast to the east. The site is positioned about half way between the villages of Addlethorpe some 2km to the west and Orby some 2.4km to the south-west. Around the site at various distances there are individual or small groups of dwellings. (CD A2 Volume 3 Figures 6-11a, b, c-i, d-i).
- 3.3 The Lincolnshire Wolds is an Area of Outstanding Natural Beauty (AONB) and a narrow strip to the north and a wider strip to the south are locally designated as Areas of Great Landscape Value (AGLV) (LPA 4 Figure PVR1). The AONB forms part of National Character Area (NCA) 43 – Lincolnshire Wolds and forms the southern tip of a long, narrow area which rises to some 75 to 80m AOD (CD A2 Volume 3 Figure 6.1 & LCC 2 Figure 3). The Wolds is a pronounced scarp edge affording long views to the west and east over adjoining NCAs. Extensive views are obtained from the Wolds over NCA 42 – Lincolnshire Coast and Marshes, within which the appeal site is located. The key characteristics of this area include a flat and undulating coastal plain, open medium scale agricultural landscape, sparse woodland and hedge cover and dispersed settlement pattern with the concentration of larger settlements towards the coast (LPA7 Appendix 5).
- 3.4 The NCAs are subdivided into Landscape Character Areas (LCA) that run broadly parallel to the AONB and the coast. Starting in the east and running westwards are LCA K1 -Tetney to Gibraltar Point Naturalistic Coast; LCA J1 Tetney Lock to Skegness Coastal Outmarsh; LCA I1 Holton Le Clay to Great Steeping Middle Marsh and LCA G2 Little Cawthorpe to Skendleby Wolds Farmland (CD F5 & LCC 2 Figure 2).
- 3.5 The appeal site is located within the LCA J1 - Tetney Lock to Skegness Coastal Outmarsh LCA, whose key characteristics are described as: a low lying, mostly flat, with some areas of gentle undulations, coastal plain; some wide open views and big skies; a stretch of coastal resorts from Mablethorpe to Skegness and a predominantly intact and distinctive rural landscape with some man-made influences including several wind farms. In terms of operational wind farms, this LCA has at some 6km to the south 2 wind turbines at Croft (91m to tip) and at some 13km to the north a substantial group of 16 turbines (Bambers, 87m to tip), to the west of Mablethorpe. Beyond Bambers to the north-west is a single turbine (67m to tip) at Yarburgh (APP3 Appendix 4).

- 3.6 The narrow coastal strip between Chapel St Leonards in the north to Skegness in the south is almost continuously developed with extensive caravan/mobile home parks, holiday fun parks and urban development. Prominent features associated with tourist activity on the coast are the Fantasy Island complex at Ingoldmells which features a tall roller coaster and Butlins Holiday Village with its distinctive Skyline Pavilion. Between 5km and 12km offshore are the Lincs, Lynn and Inner Dowsing, offshore wind farms that extend for some 13 to 14km from just north of Chapel St Leonards to Skegness. Lynn and Inner Dowsing commissioned in 2009 have 54 turbines with a blade tip height of 134m and Lincs commissioned in 2013 has 75 turbines with a blade tip height of 160m.
- 3.7 To the west is LCA I1 Holton Le Clay to Great Steeping Middle Marsh, described as the gently undulating foothills of the Wolds with medium to large scale fields; scattered blocks of mixed deciduous woodland; frequent scattered villages and farmsteads and as a distinctive and tranquil rural landscape with few detractors. To the north-west at some 10km at Ulceby and located on high ground within the AONB is a single wind turbine, (Lincolnshire Poacher, 49m to tip).

## 4. Planning Policy and Other Relevant Guidance

### National Energy Policy

- 4.1 *The Energy Challenge July 2006* refers to renewable energy being an integral part of the Government's strategy for tackling climate change and the key role planning has in its delivery (Doc 20 Appendix 1). *The Energy White Paper, Meeting the Challenge - May 2007*, reiterates the importance of renewable energy as part of international and domestic energy strategy response to the challenges of climate change and energy security (CD C1).
- 4.2 *The Climate Change Act 2008* sets a legally binding target to reduce greenhouse gas emissions by at least 80% by 2050 and reductions in CO<sup>2</sup> emissions of some 26% by 2020 against a 1990 base. The Act set up the Committee on Climate Change (CCC), an independent expert body to advise on, amongst other things, the level of carbon budgets necessary to meet the binding target. *The Energy Act 2008* strengthened the Renewable Obligation to drive greater and more rapid deployment of UK renewables with the aim of increasing the diversity of the UK's electricity mix, improving reliability of energy supplies and helping to lower carbon emissions from the electricity sector. The *EU Directive 2009/28/EC* set the UK a target to produce 15% of all energy from renewable sources by 2020.
- 4.3 *The Renewable Energy Strategy July 2009* (RES) sets how binding targets will be met (CD C2). The RES notes that the UK's contribution to the EU target is to increase the share of renewables in the energy mix to 15% by 2020, represents a seven-fold increase in UK renewable energy production from 2008 levels. The RES seeks the delivery more than 30% of electricity generated from renewables of which some 66% will come through on and offshore wind projects. Recognising there would be pressure on some local environments, the RES supports the swifter delivery of renewable and low carbon energy applications.
- 4.4 The RES seeks: to reduce UK CO<sup>2</sup> emissions between now and 2030; promote the security of our energy supply, reducing overall fossil fuel demand by around 10% and gas imports by 20–30% against forecast use in 2020. The RES is an integral part of the overall *Low Carbon Transition Plan* to ensure delivery of clean, secure and affordable energy of the future. This plan established a roadmap for the decarbonisation of the UK, set 5-year carbon budgets and reiterated the central role planning has in supporting the deployment of renewable energy.
- 4.5 *The Renewable Energy Action Plan July 2010* reiterates Government support for renewable energy and reinforced the need to meet EU targets through the development of renewable energy resources. The Plan refers to the CCC advising on the scope for introducing more ambitious targets for renewable energy. In July 2010, DECC<sup>1</sup> published the Annual Energy Statement reaffirming the Government's commitment to renewable energy and a commitment to positive action to drive renewables deployment through the implementation of a robust delivery plan.

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<sup>1</sup> Department of Energy and Climate Change

- 4.6 The CCC in *The Renewable Energy Review - May 2011* (RER) (CD C3) highlights that the 2020 ambition to develop renewables as an option for future decarbonisation requires large-scale investment to help support technology innovation and new policies to address barriers to uptake. The RER indicates that, compared with onshore wind, most other renewable energy generation technologies are expensive and likely to remain so until at least 2020, and in some cases, considerably later. As such onshore wind is seen as a key element of the portfolio of low carbon generation technologies which the CC highlighted as being required to ensure that UK renewable energy targets and climate change commitments are met.
- 4.7 *The Electric Market Reform (EMR) White Paper, July 2011* describes onshore wind as mature technology in which the market can invest with some certainty (CD C5). The vision to be achieved by 2030 is a reduction in greenhouse gas emissions in line with carbon budgets and to be on-track to achieve an 80% reduction by 2050. There is reference to a substantial decarbonisation of the electricity supply with more than 33% of electricity generation coming from renewable resources. Cost competitive on and offshore wind power is highlighted as a reliable and stable future technology forming a substantial part of the generation mix.
- 4.8 *The UK Renewable Energy Roadmap - July 2011* (CD C4) reiterates the target that 15% of UK energy demands are to be met from renewable sources by 2020. The ambition extends beyond 2020 and refers to CCC advice that there is scope for renewable energy to meet 30 to 45% of all energy consumed in the UK by 2030. *The Second Annual Energy Statement November 2011* reiterated the commitment to delivering clean energy and tackling climate change.
- 4.9 *The Carbon Plan – Delivering our Low Carbon Future - December 2011*, set out plans for achieving the emissions reductions committed to in the first 4 Carbon Budgets for the period 2008 to 2027. These relate to the legally binding targets to reduce the greenhouse gas emissions as set out in the 2008 Act. The 3 parts of the expected electricity generation portfolio are listed as renewable power, nuclear and coal and gas fired power stations fitted with carbon capture and storage (CCS). The Plan identifies that the power sector accounts for some 27% of UK total emissions by source and that by 2050, emissions from the sector needs to be close to zero. In addition, it is estimated that electricity demand may rise between 30 and 60% and "...may need as much as double today's electricity capacity to deal with peak demand..." Given uncertainties over the most cost effective mix of technologies and the pace of transition, the Delivery Plan sets out the commitment to "ensuring that the low carbon technologies with the lowest costs will win the largest market share..." Thus, whilst there is some flexibility in the overall eventual mix that will constitute the future UK generation platform, wind energy as a low cost renewable technology is seen as having an important role.
- 4.10 *The Energy Security Strategy, November 2012* recognises the important and far greater role electricity will play in the future particularly as electric transport increases. The strategy emphasised the need for frameworks to be put in place to encourage the market to shape a broad spread of generation

including renewables, gas and nuclear. Energy security is seen as central to ensuring the UK remained an attractive investment location.

- 4.11 *The Energy Bill and Annual Energy Statement 2012 (AES) (CD C9)* were introduced to Parliament in November 2012. The Energy Bill is intended to implement the key aspects of Electricity Market Reform to establish investor confidence in providing renewable energy infrastructure. The AES intends that a balanced energy policy will be delivered involving more investment in renewables. The AES recognises that increasing the supply of renewable energy is critical to keeping the UK on a low carbon pathway and helping to meet legally binding carbon targets. On planning policy, the AES notes the important role the planning system has in tackling climate change and the transition to a low carbon economy and looks to Lpas to have a positive strategy to promote energy from renewable and low carbon sources in their local plans. Lpas are expected to approve applications if the impacts are, or can be made, acceptable.
- 4.12 *The Renewable Energy Roadmap Update - December 2012 (CD C7)* sets out the progress and changes in the renewables sector over the past year and sets out challenges and actions for the year ahead. The commitment to increasing the deployment of renewable energy is reiterated and identifies that encouraging a diverse mix of energy sources including renewables is the best way to meet our decarbonisation ambitions.
- 4.13 On onshore wind, the Update records that "*...the Government is committed to onshore wind as part of a diverse energy mix contributing to a security of supply and carbon reduction targets...*" It adds that onshore wind provides substantial economic benefits and that the Government is seeking to remove barriers to the development of appropriately sited projects, whilst giving local communities more influence. The Update repeats the 2011 Roadmap conclusion that whilst the current pipeline for onshore wind has the potential to provide the appropriate quantity of development, "*...we cannot be certain how much of the capacity in the pipeline projects will go forward as not everything in the pipeline will be consented and not everything consented will be built...*" The Update recognises that there remains an urgent need for new large scale projects to come forward to ensure that the 2020 target and the wider decarbonisation objectives are met.
- 4.14 *The UK Renewable Energy Roadmap Update, November 2013 (CD C8)*, identifies that despite a massive boost in renewable electricity in the 12 months to June 2013, the amount of extra renewable energy (across all 3 of the main sectors of electricity generation, heat and transport) in the last 2 years up to 2020 has to be greater than has been achieved in the entire period to date. Figure 5, page 15 shows that by the end of 2012 there had been the equivalent generated of 64TWh of renewable electricity, heat and transport. The increase needed in the period 2018 to 2020 is in the order of 70TWh. The 2103 Update acknowledges that, there remain so many uncertainties and economic issues to be addressed for much of the overall pattern of supply, we have to continue to place great weight on the ability to deliver from the onshore wind sector without the need for the enhanced levels of support that other sectors are getting now or will need into the future.

- 4.15 *The CCC 5th Progress Report October 2013* reiterates that a step change in the pace of emissions reductions is required to meet carbon budgets and the implementation of measures designed to deliver a sustainable, low carbon economy which contributes to the global imperative to limit climate change and that a significant increase in the rate of decarbonisation is required if we are to deliver against future carbon budgets.
- 4.16 The EU report *Going Green for Growth*, issued following the October 2013 Summit of EU climate change Ministers, set a vision for a low carbon economy. The report makes an overarching economic and strategic case for early and ambitious EU low carbon action to deliver cost efficient and cost effective EU decarbonisation that delivers maximum economic and wider benefits for Europe. Three immediate priority EU actions are identified within the report, are (i) to agree an ambitious target-based post 2020 policy framework in line with the EU Low Carbon and Energy Roadmaps; (ii) to reform the EU Emissions and Trading System in order to cut emissions cheaply and further incentivise low carbon investments; and (iii) to be in a position to make an ambitious EU emissions reduction offer at the World Leader's Climate Change Summit in Autumn 2014. The report makes the clear statement that "...Modern energy assets and infrastructure built today could provide decades of economic benefits to the EU. Energy investments represent one of the most productive forms of infrastructure investment available..." The Commission estimates that reaching our 20% energy saving target by 2020 could reduce EU oil imports by 2.6bn barrels of oil per year. In addition, the report outlines wider co-benefits and policy synergies for decarbonisation including health through cutting pollution, as well as biodiversity and nature conservation.

#### National Planning Policy and Guidance

- 4.17 National Policy Statements (NPS) are a material consideration in decisions on planning applications<sup>2</sup>. *NPS EN-1 – Overarching National Policy Statement for Energy - July 2011* (CD D2) highlights that to meet emissions targets, the consumption of electricity will need to be almost exclusively from low carbon sources. The short-term implication is that much of the new capacity would need to come from on and off-shore wind generated electricity. To meet the 2020 target for energy from renewable sources, NPS EN-1 highlights an urgent need to bring forward new renewable electricity generating projects as soon as possible. Whilst offshore wind is expected to provide the largest single contribution to the 2020 target, onshore wind is highlighted as, the most well-established and currently the most economically viable source of renewable energy available for future large-scale deployment in the UK (paragraph 3.4.3). To meet binding targets and to decarbonise the power sector by 2030, paragraph 3.4.5 of NPS EN1 reiterates that it is necessary to bring forward renewable energy electricity generating projects as soon as possible and that the need for these projects is urgent.
- 4.18 NPS EN-1 recognises that renewable energy infrastructure has the potential to result in adverse impacts on the historic environment and negative effects

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<sup>2</sup> Paragraph 3 – National Planning Policy Framework



should be weighed against the wider benefits of the proposal. Paragraphs 5.9.12 and 5.9.13 of NPS EN-1 cautions that whilst the duty to have regard to the purposes of nationally designated areas i.e. AONBs applies when considering applications for projects outside these areas which might have impacts within them, the fact that a project would be visible from within a designated area should not, in itself, be a reason for refusing consent.

- 4.19 Paragraph 2.7.1 of *NPS EN-3 – Renewable Energy Infrastructure - July 2011* reiterates the important role of onshore wind and deals with issues including landscape and visual impact, the historic environment noise and ecology (CD D3). Paragraphs 2.7.17 and 2.7.43 indicate that the length of time for which consent is sought should be taken into account when considering landscape and visual effects and any effect on the setting of a designated HA. NPS EN-3 recognises that commercial wind farms are large structures and that there will always be significant landscape and visual impacts for several kilometres around a site. Paragraph 2.7.56 says that any noise assessment should be based on ETSU-R-97 (ETSU) and published best practice.
- 4.20 National planning policy is set out in the *National Planning Policy Framework* (Framework) (CD D1). At the heart of the Framework is a presumption in favour of sustainable development. A core principle is that in a changing climate, planning should support the transition to a low carbon future and encourage the use of renewable resources. Paragraph 93 provides for planning to play a key role in helping to shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the effects of climate change, and supporting the delivery of renewable energy and associated infrastructure. This is central to the 3 dimensions of sustainable development. Paragraph 98 recognises that small-scale renewable energy projects provide a valuable contribution to cutting greenhouse gas emissions.
- 4.21 The Framework's core principles, paragraph 17, recognise the intrinsic character and beauty of the countryside and that development should contribute to conserving and enhancing the natural environment by protecting and enhancing valued landscapes (paragraph 109). AONBs have the highest status of protection in relation to landscape and scenic beauty (paragraph 115). Paragraph 123 sets out the principle that planning decisions should aim to: avoid noise giving rise to significant impacts on health and quality of life as a result of new development and mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, through the use of planning conditions.
- 4.22 In terms of the historic environment, paragraph 131 says that account is to be had to: the desirability of sustaining and enhancing the significance of Heritage Assets (HA); highlights the positive contribution that conservation of HAs can make to sustainable communities and the desirability of new development making a positive contribution to local character and distinctiveness. The Framework identifies that when considering the impact of a proposed development on the significance of a designated HA, great weight should be given to the asset's conservation and the more important the asset, the greater the weight should be. Significance can be harmed or

lost through alteration or destruction of the HA or development within its setting. Substantial harm to a designated HA of the highest significance (SAMs and Grade I and II\* Listed Buildings) should be wholly exceptional. Where a proposed development would lead to substantial harm to the significance of a designated HA, permission should be refused, unless it can be demonstrated that the substantial harm is necessary to achieve substantial public benefits that outweigh that harm. Where a development proposal would lead to less than substantial harm to the significance of a designated HA, this harm should be weighed against the public benefits of the proposal (paragraphs 132 to 134).

- 4.23 *Planning Practice Guidance* (PPG) reiterates the importance of, renewable energy to the economy, reducing greenhouse gases and tackling climate change. PPG makes it clear that, amongst other things: need does not automatically override environmental protections; local topography is an important factor recognising that the impact can be as great in mainly flat landscapes as in hilly areas; that proposals close to AONBs where there could be an adverse effect will need careful consideration and that protecting local amenity is an important consideration. On wind turbines, PPG confirms that ETSU should be used to assess and rate noise and that the May 2013 Institute of Acoustics (IoA) Good Practice Guide represents current industry good practice. Reference is also made to public safety, ecology, shadow flicker, energy output, landscape and visual impacts.
- 4.24 *ETSU-R-97* describes a framework for the measurement of wind farm noise and attempts to strike a balance between the environmental benefits of wind energy development and the potential for environmental damage through noise pollution (CD8.1). ETSU gives indicative noise levels calculated to offer a reasonable degree of protection for neighbours without placing an unreasonable restriction on wind farm developments. Thus, in most cases noise limits set relative to the existing background noise at the nearest noise-sensitive properties is considered the most appropriate approach.
- 4.25 *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (GPG) was published by the Institute of Acoustics (IoA) in March 2013. The GPG presents current good practice in the application of the ETSU assessment methodology for all wind turbine developments above 50kW. The GPG is supported by Supplementary Guidance Notes, of which there are currently 6, expanding on some of the issues covered in the GPG. The GPG is endorsed by DECC as current industry good practice and as a supplement to ETSU (CD D12). The GPG provides guidance on engagement, background data collection, determining the ETSU limit, noise predictions including cumulative noise predictions and other matters including planning conditions and amplitude modulation.

#### Development Plan Policy

- 4.26 The development plan comprises saved policies of the *East Lindsey Local Plan First Alteration (LP) 1999* (CD E2). The LP does not contain policies specific to renewable energy (Doc 2 paragraph 6.4). Other policies referred to by the parties as being of relevance are Policy A4 – Protection of General Amenities; Policy A5 – Quality of Design of Development and Policy C11 – Lincolnshire

Wolds Area of Outstanding Natural Beauty and Areas of Great Landscape Value.

- 4.27 Policy A4 says that development which unacceptably harms the general amenity of people living or working near a proposal will not be permitted. The supporting text to the policy recognises that all new development has an impact on its setting and nearby residents and that this is not, on its own, a reason to refuse permission. In assessing the acceptability of a proposal the matters assessed include the potential for excessive noise, especially during unsociable hours; disturbance by movements to and from the site; harm to the distinctive character of the area and highway safety.
- 4.28 Policy A5 indicates that development will only be permitted where its design including layout, scale and appearance does not detract from the distinctive character of the area; the development retains features or characteristics that are important to the quality of the local environment including important medium and long distance views and it is integrated within a landscaping scheme appropriate to its setting. The supporting text to Policy A5 says that particular attention will be paid to the design of development in, amongst others, the Fens and Marshes where special character has been identified. Development in these areas must show how they have taken into account and respected their locally distinctive character.
- 4.29 The site is located outside the AONB and the adjoining AGLV, Policy C11 A identifies that the lpa will protect the natural beauty of the AONB by not permitting development that would, amongst other things, harm landscape features that contribute to the character of the area or harm the distinctive character, role or regional/local historic significance of the area or inhibit the quiet enjoyment of the AONB.

#### Emerging Development Plan Policy

- 4.30 The lpa has produced a pre-submission draft *East Lindsey Core Strategy* (CS) and the Statement of Common Ground (SoCG) identifies 2 relevant policies. Policy 19 - Renewable Energy and Policy 15 – Protecting and Enhancing Our Natural Environment (CD F1).
- 4.31 The explanatory text to Policy 19 indicates that the Council is keen to encourage the exploitation of a range of renewable energy sources where this will not have an adverse impact on local communities, biodiversity or landscape character. Reference is made to the East Lindsey District Landscape Character Assessments 2009 (CD F5) which are to be used as the basis for determining the impact of developments on the landscape. Development that would have a significant impact on the setting of the AONB will be rejected. The CS identifies that it is important that wind turbines through accumulation and intervisibility do not dominate and adversely affect the wider landscape which is, amongst other things, an important economic and tourist resource. Cumulative impact, including the cumulative impact of offshore turbines, is recognised as an important consideration. When assessing the impact of proposed turbines on local communities the criteria set out in ETSU will be applied.

- 4.32 The draft policy says that large-scale renewable energy developments will only be supported where they are located outside and do not have a significantly adverse impact upon landscape areas defined as highly sensitive in the East Lindsey Landscape Character Assessment and adjacent areas; the AONB and where the individual or cumulative impact is not considered to have a negative impact on amongst other things residential amenity, surrounding distinctive landscape qualities, heritage assets and highway safety.
- 4.33 CS Policy 15 indicates that the District's landscape, as identified in the East Lindsey District Landscape Character Assessments 2009 and their special characteristics will be protected.

Other Planning Policy & Guidance

- 4.34 *The Lincolnshire Wolds Management Plan 2013-2018* (LPA7 Appendix 3) has been produced in accordance with S89 of the Countryside and Rights of Way Act 2000 and adopted by Lincolnshire County Council (LCC) and its constituent District Councils (Doc 54). Expansive sweeping views are identified as one of the special qualities of the AONB and there is reference to its open character with extensive outward views eastwards to the coast. The plan recognises that the AONB is especially vulnerable to cumulative impacts from medium to large scale wind energy developments that lie in close proximity to the boundary and have potential to impact on panoramic views from and to the AONB from the Lincolnshire Coast and Marshes. The objective is to seek to ensure that development plans and planning guidance consistently recognise and uphold the primary purpose of the AONB designation namely the protection and enhancement of its natural beauty and special character. The policy (PP7) of the Management Board is "to ensure a general presumption against wind energy schemes in any location which could cause significant and demonstrably detrimental effects upon the natural beauty and intrinsic characteristics of the AONB".
- 4.35 In 2009 *Reviewing Renewable Energy Targets for the East Midlands* was produced by Faber Maunsell as part of the evidence base for a partial review of the now revoked Regional Strategy. The report predicted that the East Midlands would not be able to achieve the 15% renewable energy contribution by 2020 (based on the then target of 20% by 2020) without exceeding the projections in the report or importing renewable energy from outside the region. The report concluded that it was vital for the region to strive and exceed the challenging targets set out in the report through, amongst other things, maximising onshore wind where possible.
- 4.36 *Low Carbon Energy Opportunities and Heat Mapping for Local Planning Areas Across the East Midlands: Final Report March 2011* prepared by Land Use Consultants to assist Ips across the East Midlands in developing policies and strategies that support low carbon energy deployment up to 2030 (CD F2). This report identifies that onshore wind forms the greatest technical resource potential for all the local authorities in Lincolnshire, with East Lindsey being one of 4 local authorities judged to have the greatest potential.
- 4.37 *Lincolnshire County Council Wind Energy Position Statement (revised)* was adopted by LCC in February 2013 (Doc 98). In terms of landscape and visual

impact and the impact on residents living conditions, LCC considers that onshore wind energy developments are only acceptable where they are:

- located outside highly sensitive landscape areas as defined in Landscape Character Assessments. The importance of uninterrupted vistas is a significant aspect of the character of the Lincolnshire landscape and therefore afforded great significance when considering the potential visual impact of developments;
- located outside of areas defined in Landscape Character Assessments as having a low landscape capacity to visually accommodate wind turbine development. LCC would encourage and support the District Councils to prepare rigorous landscape character assessments that include visual capacity assessments and intervisibility assessments and cumulative impact derived from the presence of existing wind farms;
- not located within the AONB or within 2km of the boundary of the AONB or greater where there are specific views present so as not to negatively impact upon views into or out of the designated area;
- located sufficient distance from town and villages so as not to be too prominent, e.g. outside of 2km from defined settlement boundaries.

4.38 The position statement indicates a general presumption against turbine developments on the grounds of potential negative cumulative visual impact, wind farms should be located such that they would not merge with the existing developments (on and offshore), thereby resulting in a negative cumulative visual impact: - settlements of more than 10 dwellings should not have turbine developments in more than 90° of their field of view, this normally equates to 10km from windows in dwellings; - individual dwellings should not have turbines in more than 180° of their field of view.

4.39 The amenity of residential occupants must be maintained at an acceptable level, and the following criteria shall be applied:-

- no turbine shall be constructed close to a dwelling (the accepted distance for separation is 700m) however, noise and amplitude modulation issues can be present up to 2km away. Therefore, unless it can be demonstrated that there would be acceptable noise levels within the 2km radius of a dwelling, the minimum distance should be 2km.
- no turbines shall be constructed within a distance of a factor of 10-times the diameter of the blades of a dwelling to mitigate against flicker, unless intervening topography/structures negates the impact.
- wind farm developments must demonstrate that they would have no unacceptable impact due to noise, amplitude modulation, low frequency sound or vibration on residential amenity.

## 5. The Case for Mark Caudwell Limited

### Introduction

- 5.1 There is a raft of national energy policy, much of it recent that highlights the Government's support for the exploitation of renewable energy in its commitment to tackle climate change and secure domestic energy supplies. The UK has a legal obligation to achieve 15% of its energy from renewables by 2020. The extant lead scenario in the 2009 RES envisages that some 30% of electricity from renewables will be required by 2020 if the legal obligation is to be met. The RES is clear that the onshore wind share of the overall 30% will need to be substantial. The appellant acknowledges that the urgency of the challenge does not automatically override environmental protections and the planning concerns of the local community. However, Government policy means that substantial weight should be given to the need for and benefits of renewable energy production.
- 5.2 There are no unresolved issues relating to HAs or ecology. There have been some passing observations about an effect on birds, but no evidence was submitted that would justify dismissing the appeal on its own or in combination with other issues. OWAG refers to issues of flooding, construction traffic, telecommunications and conditions. With regard to flooding, the observations of OWAG on this matter do not address impact and the Environment Agency (EA) has no objection. On highway safety and construction traffic, OWAG's observations are no more than a record of what the ES has said, with emphasis on traffic movements and the Highway Authority (HA) has, subject to the imposition of appropriate conditions, no objection. Little attention has been given by local people in their evidence to construction traffic issues, as opposed to the landscape and visual effects of the turbines. There is no adverse impact evidence to which meaningful weight could be given. On telecommunications, OWAG has said nothing to show that there is a serious issue to be addressed.

### Development Plan and Emerging Development Plan

- 5.3 LP Policy A4 is limited to the protection of the amenities of people living or working near proposed developments. The reasoned justification at paragraph 2.79 has a reference to the "*distinctive character of the area*", on which the lpa place considerable emphasis. However, given that the policy and the reasoned justification are clearly aimed at the amenities of people, it is a stray and out of place reference. LP Policy A4 is only relevant to the issue of living conditions of residents.
- 5.4 LP Policy A5 is aimed solely at new buildings addressing the quality and design of development and explicitly deals with matters that could not possibly be relevant to a wind energy development. The reasoned justification emphasises the focus on new buildings through references to design guides, landscaping and public art. The lpa argues the relevance of the policy principally by reference to its advice on Fens and Marshes, an area which includes the site. However, advice under this heading in the reasoned justification specifically deals with development within villages. Inspectors have found the policy less than helpful (CD H17 paragraph 42).

5.5 The lpa refer to LP Policy C11 on the basis that the turbines would impact on the interests of the AONB. Only paragraph A (ii), harm to the distinctive character and/or inhibition of the quiet enjoyment of the AONB, is material since it can be said to apply to development outside, but affecting the AONB.

5.6 The CS has not been submitted for examination and it attracts little weight.

#### The Framework

5.7 While the decision making process commences with S38 (6) of the 1990 Act, here it is the Framework that has the most relevant advice, thus attracting greater weight for the purposes of S70 of the Act. Given the absence of a LP policy on renewable energy, the second part of the decision making advice in Framework paragraph 14 is engaged. This says that where the development plan is silent, i.e. on renewable energy, permission should be granted unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework as a whole. Here, the presumption in favour of sustainable development applies and there are no specific policies in the Framework that would indicate that this development should be restricted. Therefore, this is a case where permission should be granted provided that there are no adverse impacts which significantly and demonstrably point to a refusal.

5.8 The decision maker also has to focus on Framework paragraph 98 regarding the approach to the planning balance. The other material considerations noted in paragraph 98 include LP policies quite apart from their separate status in section 38(6) of the Act. Framework Paragraph 98 applies specifically to energy development and requires that, subject to examination of all material considerations, applications for planning permission should be approved if the impacts of the proposed development are or can be made acceptable. This advice is consistent with Framework paragraph 14.

5.9 Framework paragraph 109 advises, amongst other things, that the planning system *"...should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes"*. There are 2 logical possibilities regarding the interpretation of this objective. Either the paragraph is badly written and it is not possible to extract a sensible meaning from the phrase or the phrase is deliberate. If so then the words must refer something more than a landscape which is valued by those who live within it. If that was the meaning of the phrase then there would be no need for the advice since all landscapes are locally valued. Equally there is a danger of reducing the planning system to an exercise in gauging local opinion.

5.10 If the term *"valued landscapes"* is to have any meaning it can only mean landscapes recognised by society through a planning designation. At the local level, this can only mean a landscape considered to be of "value" because of particular attributes which has been proposed, submitted for public consideration through the planning process and then, if deemed appropriate, designated through adoption of the relevant planning policy document, in this case the LP. If the appellant is right, then the area of Orby Marsh is not a valued landscape for the purposes of Framework paragraph 109. If the phrase is simply badly drafted then it is a matter for the SoS to treat the phrase accordingly. Framework paragraph 97 on increasing the use

and supply of renewable energy is of direct relevance although the primary context is the preparation of plans. However, Footnote 17 to paragraph 97, which makes it clear that NPSs EN-1 and EN-3 are directly relevant to decisions on wind energy developments.

Weight to be given to the Development Plan

- 5.11 The LP has no saved renewable energy policy and as such has little of material added value for this appeal. Framework Paragraph 215 advises on the approach to be taken to giving weight to policies in development plans. As LP Policy A4 is relevant to the protection of the amenities of those living or near to the appeal site, it is broadly consistent with the Framework.
- 5.12 For the reasons set out in paragraph 5.4 above, LP Policy A5 is completely irrelevant to the appeal. However, if the appellant is wrong, the development complies with the first paragraph of the policy since, in the broadest of terms, a wind energy development assists in improving the quality of our environment. However, it is impossible to relate LP Policy A5 to the development and to the Framework in the context of a wind energy development. Accordingly, no weight should be given to this policy.
- 5.13 LP Policy C11 contains no balance within the relevant paragraph A, but there is some consistency between those parts of the policy which relate to development in the AONB in Framework paragraph 115. However, the Framework does not address development outside, but potentially impacting on the interests of AONBs. Therefore, there could not be said to be any consistency between paragraph A of LP Policy C11 and the Framework, although to be fair the appellant acknowledges there is no inconsistency.
- 5.14 Drawing the above together, the SoS will get some assistance from LP Policies A4 and C11, but none from Policy A5. The appellant agrees with the conclusions drawn by the Inspector in the Gayton le Marsh decision that, *"...the Local Plan does not provide a realistic context for considering wind farm schemes and is therefore out of date..."* (CD H63 paragraph 80).

NPSs EN-1 and EN-3

- 5.15 Footnote 17 to Framework paragraph 97 brings NPSs EN-1 and EN-3 directly into play. Paragraph 2.7.17 of EN-3 advises that an important consideration for the decision maker will be the time-limited nature of wind energy development if a decommissioning condition is imposed (CD D3 & SC2<sup>3</sup>). Thus, the reversibility of the development is a material consideration. This point is emphasised in EN-3 paragraph 2.7.43 and should be given weight, particularly in the context of heritage and landscape and visual impacts.

Planning Practice Guidance

- 5.16 PPG does not change the policy advice in the Framework or within NPSs EN-1 or EN-3. At most, PPG puts the gloss of the Government's current views on the advice in these documents. The House of Commons Library Standard Note - Planning for Onshore Wind Farms 14 May 2014 confirms that nothing

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<sup>3</sup> SC – Suggested Condition



within the PPG is intended to give communities a veto over wind energy development (Doc 85). On noise, PPG gives the clear advice that the guidance in ETSU should be followed and repeats the advice in NPS EN-3.

#### Operational Noise

- 5.17 The Ipa did not refuse the application on the basis of operational noise impact. However, Mrs Smith, speaking as a local resident, gave evidence supported by MAS Noise Consultants (SM 1-14).
- 5.18 The appellant and MAS addresses amplitude modulation (AM) in written evidence (APP 13 & SM 9-13). However, there was no need to deal with this evidence in the inquiry since the appellant agrees that a condition should be imposed requiring a scheme to be submitted to address AM (Doc 86). MAS sought to address the cumulative noise effects of Orby Marsh, operational onshore turbines at Croft and certain offshore wind farms (SM 15). In the event that evidence focussed entirely on the offshore wind farms.

#### Data Analysis Reliability

- 5.19 What must concern the SoS is whether or not the information submitted by the appellant provides a robust background noise analysis from which it is appropriate to derive the applicable ETSU noise limits (APP 14 & 15). There is no merit in debating differences between the current analysis and the original analysis used for the ES and the first inquiry of 2012/2013. For this inquiry, the appellant has relied on a re-analysis of the ES data.
- 5.20 Mrs Smith highlighted differences in the appellant's background noise charts between the evidence of January 2014 (APP 11 & 12) and September 2014 (APP 14 & 15). Following checks on the analysis, the appellant conceded that an error had been made in the information presented in January 2014 due to the erroneous time stamping of the data as GMT and not BST (APP 12). However, of particular relevance is that the appellant confirmed that this same time stamp error had not been carried through to the data in the September 2014 analysis (APP 14 & 15). The appellant also confirmed that all the necessary data exclusions had been properly undertaken.
- 5.21 As to the effect of the time stamp error, the appellant confirmed that the differences between the derived background noise curves (APP 15, Tables A.1 and A.2) and the differences between the resultant derived noise limits (APP 15 Tables A.3 and A.4) all account for the combined effects of both the changes to the upper wind speeds to which the background noise curves have been re-derived in the September 2014 analysis (APP 14 & 15) as well as all changes relating to the issues of time stamps and data exclusions. Thus, the September analysis of the background noise data is correct (APP 14 & 15). Despite having access to the complete data set used by the appellant, Mrs Smith submitted no evidence to demonstrate anything to the contrary.

#### Noise Impact

- 5.22 APP 15 Appendix C contains the tables and figures of numerical values used in the present noise assessment and are set out in an identical format to APP 12 Appendix C to allow comparison. This is to allow a transparent comparison between the underlying data sets and calculation parameters on

which the objectors have founded their conclusions and the data sets and calculation parameters on which the appellant has based his conclusions.

- 5.23 Mrs Smith had originally questioned the noise assessment locations used for some of the properties (SM 2 paragraphs 8.13-8.16). Whilst the differences between the location coordinates proposed by Mrs Smith and by the appellant would make any material differences to the conclusions reached, a revised schedule of noise assessment locations was submitted (APP 15 Appendix E & Table C.4). The only difference relates to Habbertoft Farm where now the coordinates properly relate to the amenity area of all of the named residential properties. The largest difference that moving the assessment locations has made in terms of the calculated noise immission levels is an increase of no more than plus 0.3 dB and a decrease of no more than minus 0.5 dB.
- 5.24 Mrs Smith interpreted the minimum data requirements of no fewer than 5 valid data points per 1 m/s wide bin for the analysis of background noise data as set out in the IoA GPG, paragraph 2.9.5 as referring to wind speed bins not necessarily centred on integer wind speeds (CD J6). In contrast, the analysis previously presented in APP 12 related to 1 m/s wide wind speed bins centred on integer wind speeds. There is no "right" or "wrong" in this choice. The IoA GPG advises in its Glossary of Terms that *"...in the case of wind speeds, bins are often centred on integer wind speeds with a width of 1 m/s. For example the 4 m/s bin would include all data with wind speeds of 3.5 to 4.5 m/s"*. Thus, the reference to integer wind speeds is an observation of general practice rather than a firm requirement.
- 5.25 In order to assist in a direct like for like comparison with Mrs Smith's results, APP 12 Appendix C Figures C.2 to C.13 present revised background noise analysis curves directly comparable with the data relied upon by Mrs. Smith, in that each of the derived background noise curves extends to the highest 1 m/s wide wind speed bin which satisfies the requirement to have a minimum of 5 valid data points, but with no associated requirement for the bin to be centred on an integer wind speed. The derived background noise levels relating to each of Figures C.2 to C.13 of APP 15 Appendix C are tabulated in Tables C.2 and C.3. For ease of comparison, the differences between the results presented in APP 12 Tables C.2 and C.3 and the results presented in the directly comparable APP 15 Appendix Tables C.2 and C.3 are summarised in the APP 15 Appendix A, Tables A.1 and A.2.
- 5.26 The consequential effect of the revised derived background noise curves is reflected in modified ETSU derived noise limits (APP 15 Appendix C Tables C.5 and C.6). These noise limits should be compared with those previously presented in the corresponding Tables in APP 12 Appendix C Tables C.5 and C.6. The differences between the original and revised Tables C.5 and C.6 are listed in Tables A.3 and A.4 of Appendix A.
- 5.27 APP 15 Appendix A, Table A.3 shows that for wind speeds below 7 m/s the daytime limits are all lower in the revised analysis, whilst at wind speeds above 7 m/s they are higher. The reason why the noise limits are higher at these higher wind speeds is primarily a consequence of not limiting the background noise curve to an upper wind speed limit corresponding to an

integer wind speed, thereby slightly extending the upper wind speed at which the noise limit “tops out”.

- 5.28 APP 15 Appendix A, Table A.4 shows no difference between any of the night-time limits presented in APP 12 Appendix A and those derived from the re-analysed background noise data. This is because the noise limits at all properties and across all wind speeds are reliant on the fixed lower absolute noise limit of 40 dB(A) and are not dependant on the measured background noise levels, which all lie below 35 dB(A) even at the higher wind speeds.
- 5.29 There is a difference between the results in APP 12 Appendix C and those in the APP 15 Appendix C in terms of the calculated noise immission levels. The differences in calculated noise immission levels have resulted from 2 effects. First, the calculated noise immission levels in APP 15 Appendix C now all relate to the revised noise assessment locations. Second, IoA SGN 4 has clarified that, in wind farm noise assessments where wind shear is to be retrospectively accounted for then, when establishing potential quiet daytime effects, only data collected during the evening periods i.e. 18:00 to 23:00 hours should be accounted for. Data for any other “quiet daytime” periods, which are otherwise defined in ETSU as including Saturday afternoons from 13:00 to 18:00 hours and Sundays from 07:00 to 18:00, should be excluded.
- 5.30 This consideration, detailed in the updated APP 15 Appendix D, has resulted in small changes to the calculated noise immission levels when accounting for the effects of site measured wind shear, as presented in APP 12 Appendix C Tables C.11 and C.12. The revised results are now in Tables C.11 and C.12 of the APP 15 Appendix C. APP 15 Appendix A, Tables A.5 and A.6 list the differences between the original and revised Tables C.11 and C.12. Here, a positive number shows that the revised noise immission level is higher.
- 5.31 Given the changes to both the ETSU derived noise limits and the calculated noise immission levels, APP 15 APP C, Tables C.13 and C.14 and Figures C.14 to C.55 provide updated versions of all the Tables and Figures comparing the calculated noise immission levels against the noise limits. These results may be compared directly with the corresponding Tables and Figures in APP 12.
- 5.32 The updated APP 15, Appendix C, Tables C.13 and C.14 continue to indicate that there are no locations at which the calculated wind farm noise immission levels will exceed the ETSU derived noise limits.

#### Evidence of Mrs Smith

- 5.33 In assessing Mrs Smith’s evidence the SoS note that it was agreed that the appellant places no reliance on the previous material produced for the ES except in relation to wind speed and background noise measurements. Thus, it is important to note that some parts of Mrs Smith’s evidence have not been fully updated following the withdrawal of previous noise consultants.

#### Policy

- 5.34 Whilst Mrs Smith submits that the advice in NPS EN-1 classified an approach to the assessment and rating of operational noise which took into account not only ETSU, but also BS4142 she is wrong (CDs D2 & J10). Paragraphs 2.7.55 to 2.7.58 of NPS EN3 make it clear that ETSU is to be used for the

assessment and rating of wind farm noise and that, if a development is shown to be capable of compliance with the rating advice in ETSU, then the decision maker may conclude that he/she need look no further. That is the position of the appellant, and the position overwhelmingly adopted in many appeal decisions issued by Inspectors and the SoS.

- 5.35 Mrs Smith refers to World Health Organisation (WHO) Night Noise Guidelines for Europe. Whilst Mrs Smith's evidence focussed on the age profile of the coastal area of Lincolnshire, she had no information for East Lindsey. It was accepted<sup>4</sup> that for a wind farm to breach advised maximum desirable L<sub>A</sub>night outside of 38 dB(A) L<sub>A</sub>90 something quite dramatic would be required. This was on the basis of looking at a yearly noise profile for the purposes of the WHO Guidance at a type of development which does not generate noise all of the time. Therefore, for a wind farm to generate in excess of the advised maximum noise level would require something that Mrs Smith did not attempt to claim. Mrs Smith also drew into her evidence the material and mapping of the CPRE in relation to tranquillity. However, her map, an extract from the CPRE's map, does not show that the area of the appeal site is highly tranquil (SM 3 Appendix 9).

#### Microphones and Windshields

- 5.36 Mrs Smith maintained an argument as to the inadequacy of the microphone wind shields adopted for the measurement of background noise levels (BNL) when compared to current good practice (SM 2, paragraphs 2.8 to 2.20; CD J6, paragraph 2.4.1). The concern is that the wind acting on the microphone may create noise. However, the microphone wind shields have been confirmed as complying with current good practice having been designed in accordance with IoA SGN 1 advice (CD J11, paragraph 2.4.7).
- 5.37 Quite apart from the compliant design of the enhanced windshields used for the background noise survey, the appellant referred to BS4142, where it is stated that the effectiveness of "standard" windshields extends up to wind speeds of 5 m/s (CD J10, paragraph 5.4). The appellant further clarified that this related to the wind speed at the microphone itself, at a height of approximately 1.5m, whereas all the measured background noise levels in the Orby Marsh assessment related to a wind speed measured at 10m height. Wind speed decreases with decreasing height above the ground (APP 15 Appendix 6A, pages 79 & 77). This shows that a wind speed of 8 m/s at 10m height relates to a wind speed at the microphone of just 5 m/s. Thus, all arguments concerning the effectiveness of the microphone wind shields adopted for the background noise survey are of no practical consequence.

#### Background Noise Measurements – Spring Cottage

- 5.38 Mrs Smith has 3 main concerns in relation to this specific matter: 1. that the location was in a field more than 20m to the south of the property where noise from vegetation could have been unrepresentative of the amenity area of the property, 2. that the more exposed microphone location would have considerably more wind contamination of background noise data than a

<sup>4</sup> X-Examination of Mrs. Smith.

microphone located in the amenity area of the property and 3. that noise levels could be up to 3.5 dB lower when sitting close to a façade due to shielding.

- 5.39 As to wind contamination on the microphone wind shield, this possibility has already been discounted due to the low wind speeds involved, paragraph 5.37 above. As to the measurement location for Spring Cottage being unrepresentative of the amenity area of that property, the IoA GPG requires that the noise levels measured should be "*representative of typical low levels likely to be experienced in the vicinity of a dwelling*" and not "*absolute lowest*" levels of background noise, and that the choice of noise monitoring locations is necessarily a matter of judgment (CD J6, paragraph 2.5.2).
- 5.40 Whilst the general aim should be to measure within 20m of the dwelling in question, the IoA GPG guidance acknowledges that this may not always be possible and does not exclude the use of data from more distant measurement locations (CD J6, paragraph 2.5.7). Here, having accounted for the distribution of possible sources of wind noise around both the measurement location and the dwelling, the measurement location adopted does satisfy the requirements of providing a representative measure of the typical low levels expected to occur in the vicinity of the dwelling itself.
- 5.41 The final point relates to comparative results presented for background noise measurements undertaken simultaneously at a location close to and further away from the façade of a property (SM 4 Appendix 17). As to the relevance of this "evidence" to the Orby Marsh case, the appellant has a number of reservations, and in particular the fact that such data relates only to the specific situation for which it was measured, i.e. Brass Castle, Harrogate. However, even for the specific example presented, the appellant has reservations as to whether the evidence actually showed the effect referred to. The conclusions have been derived on the basis of comparing the best fit curves to the 2 separate sets of noise data, and neither of the adopted "second order" best fit curves reflects well the trends actually seen in the data. Moreover, at wind speeds between around 7 m/s and 11 m/s the "best fit" curves did not pass through the measured data points and therefore could not possibly provide a reliable means of comparing the 2 data sets.
- 5.42 The presence of a building near a noise measurement location can have 2 effects on the incoming noise. First, if the property lies between the noise source and the measurement location, the structure will screen the sound waves from reaching the microphone and lower noise levels would be recorded than if the building was not there. In contrast, if the microphone is located on the same side of the building as the noise source, then the sound waves will be reflected off the structure back to the microphone and the noise levels will be increased compared to if the building was not there.
- 5.43 Mrs Smith submits that one of the significant contributing sources of background noise at Spring Cottage is from traffic on the C541. If that is the case then noise from the C541 would not be screened at properties such as Spring Cottage but would instead be on the same side of the building structure as the noise measurements (App 15 Figure C.1). In such cases, if there were to be any differences in measured noise levels due to the

proximity of the measurement location to the property façade, then noise levels would be expected to systematically increase as the distance to the façade reduces.

#### Impacts of Road Traffic (RTN) on the C541

- 5.44 Mrs Smith analysed a sub-set of noise data to explore any systematic difference in noise levels measured at both Spring Cottage and South Ings Lane between southerly and northerly wind conditions. Her analysis concluded that noise levels measured at both locations are systematically lower when the wind blows from the north than when the wind blows from the south, with these conclusions relating specifically to times when it is Mrs Smith's "expectation" that traffic flows along the C541 road would be at their highest.
- 5.45 Mrs Smith accepted that her results relied on a very limited set of data, collected on just a single Sunday, to differentiate between the southerly and northerly wind conditions. Moreover, she conceded that she had not related the results to actual traffic flows, but merely her expectation that all the noise data on which her conclusions rely actually relate to periods of higher traffic flow. Mrs Smith confirmed that it was not her contention that C541 RTN dominates the background noise environments at these locations, but that it may contribute to some degree to the total background noise environment.
- 5.46 Mrs Smith's analysis cannot be relied upon to establish the specific effect of noise arising from traffic using the C541 road on the measured noise levels at either Spring Cottage or South Ings Lane. The appellant reanalysed the measured background noise data at Spring Cottage and South Ings Lane (APP 15, pages 19 & 20, Figures A.7 and A.8). This analysis is limited to periods when the measurement locations were downwind of the C541, and therefore the contributions of C541 traffic noise levels would be at their highest, and to periods of lower wind speeds of up to 4 m/s in order to minimise the corruption of the measurements by any wind speed related noise sources such as wind blowing through foliage. The assessment also related the measured noise levels to the variable of interest, which was the simultaneously measured traffic flows along the C541 road.
- 5.47 This reassessment shows that the contribution of RTN is of no material significance at either Spring Cottage or South Ings Lane. Indeed, typical overall levels, i.e. the measured noise levels including both any C541 traffic noise contributions and all other sources of background noise also present at the measurement locations, of only around 30 dB(A) were determined even during periods of the highest traffic flows of over 1,000 vehicles per hour along the C541 road. The noise levels associated with these periods of higher traffic flows were only around 1 to 2 dB(A) higher than those measured during the lowest traffic flows.
- 5.48 To confirm this conclusion, measured noise levels at Wilcox Farm, which was the measurement location lying closest to the C541 road were assessed. Here, the measured noise levels increase by approximately 10 dB(A) as the traffic flows along the C541 increase tenfold (APP 15, page 19, Figure A.6). Based on extracts taken from the Calculation of Road Traffic Noise, this rise in noise levels is what would be expected in an environment dominated by

road traffic noise (APP 15, Appendix F). The clear correlation between noise level and traffic flow seen at Wilcox Farm is in stark contrast to the lack of correlation observed at the more distant locations of Spring Cottage and South Ings Lane.

#### Use of Spring Cottage as a Proxy for Other Properties

- 5.49 It is not accepted that the background noise data measured at Spring Cottage does not offer a reliable representation of the background noise environment at the other locations for which it has been used as a proxy, and most notably the location of Rose Cottage. Guidance in both ETSU and as reiterated in the IoA GPG refers to the need to establish representative and typical lowest background noise levels. In particular, the IoA GPG which states that, *"The measurement position should permit measurement of background noise levels judged to be typical/indicative of the area around the associated dwelling and any other dwellings for which the measurement location will serve as proxy"* (CD J6 paragraph SB8, page 9).
- 5.50 Nowhere in the relevant advice is there any reference to selecting the proxy property as being that which is located closest to the wind farm. Nor is there any reference to rejecting a single property, Spring Cottage, in preference to a property which forms one of a group of dwellings, e.g. Rose Cottage, which is one of a group of 3 dwellings also comprising Habertoft Farm and Coppins Cottage. The only requirement is that noise levels at the selected proxy property should be representative of the lower levels of noise expected across all other properties for which the data from the proxy may be adopted. This has been done, and the data collected at Spring Cottage can be relied upon as a proxy for the other locations to which it has been applied, including Rose Cottage. Moreover, there is potential issue with undertaking background noise measurements at Rose Cottage, which is close to an agricultural workshop. This could have led to the corruption of any noise data due to activities taking place in and around that unit.

#### Wyche Farm - The Noise Floor of the Sound Level Meter

- 5.51 Mrs. Smith suggests that the noise floor of the sound level meter may have affected the derived background noise curve, specifically at Wyche Farm (SM 2f, paragraph 6.28). However, the important consideration here is whether the presence of such an instrument noise floor may have in any way affected the resultant noise limits. It is not disputed between the parties that the noise floor for the sound level meters used is around 20 dB(A), and that these sound level meters were of the type recommended to be used in accordance with current good practice (CD J6, paragraph 2.4.1). The question, therefore, is the degree to which such a "standard" instrument noise floor of 20 dB(A) may have influenced the resultant noise limits.
- 5.52 Mrs. Smith accepts that the effect of any instrument noise floor would be negligible provided it was at least 10 dB below the level of the actual noise being measured. Mrs. Smith also accepted that the night time noise limits were set at a fixed 40 dB(A) for all wind speeds up to 12m/s and therefore did not rely at all on the measured background noise levels. Therefore, the sound level meter noise floor could have had no effects whatsoever on these night time noise limits.

- 5.53 Taking the quiet daytime results for Wyche Farm, where the lowest daytime noise limits had been derived (APP 15, page 39, Figure C.2), Mrs. Smith agrees that for all wind speeds up to 6 m/s the noise limit was set at a fixed absolute level of 35 dB(A), and was therefore wholly independent of the measured background noise levels. Mrs. Smith also agreed that for wind speeds above 6 m/s the noise limits have been set at 5 dB(A) above the measured background noise levels. It was consequently agreed that it was only at these wind speeds of above 6 m/s, and for the quiet daytime periods only, that the actual measured background noise levels could have any bearing on the derived noise limits. However, in all these situations where the derived noise limits are actually dependent on the measured background noise levels, the background noise levels must be at least 30 dB(A): if they were below this level then a fixed limit of 35 dB(A) would apply, as is the case for the lower wind speeds. On this basis, all the background noise levels used for the derivation of noise limits are at least 10 dB higher than the 20 dB(A) noise floor of the sound level meters. This being the case then, as agreed by Mrs Smith, the noise floor of the sound level meter will have no effect on the background noise curve, and therefore no effect either on the noise limits which are set at 5 dB above this background noise curve.

#### The Approach of ETSU to the Adoption of Proxy Background Noise Data

- 5.54 Mrs. Smith suggests that using the Wyche Farm background noise polynomial for all receptors would be "fair", by reason that it is not using the lowest possible noise levels in the area as a proxy (SM 2, paragraph 6.29). Mrs Smith additionally claimed that even the Wyche Farm data did not represent the lowest background noise levels in the area, although she agreed that, regardless of the correctness or otherwise of her assertion on this issue, it did not, in any event, have any impact on the resultant derived noise limits at Wyche Farm which represent the lowest across all locations. Regardless of this, the question is, where in policy guidance is it suggested that it is appropriate to select the lowest derived noise limits resulting from a baseline noise survey across multiple locations and then apply these lowest derived limits only as a single proxy across all noise assessment locations?
- 5.55 ETSU and the IoA GPG at paragraph 2.5.2 makes it clear that the intent should be to choose background noise survey locations that relate to "*groups of properties that through their exposure and proximity to other noise sources would be expected to have similar background noise levels*" and that the noise limits themselves should be based on "*typical rather than extreme values*" of background noise levels (both quotes from ETSU, page 59) and also that the measurements should result in "*background noise levels judged to be typical/indicative of the area around the associated dwelling and any other dwellings for which the measurement location will serve as a proxy*" (CD J6 page 9, SB 8). Mrs. Smith agreed that there was no policy advice supporting her approach that noise limits should be based on the lowest derived background noise curves across all locations.

#### Noise Predictions in Evans and Cooper (E&C)

- 5.56 The IoA GPG sets out at page 21, SB20 a procedure for the calculation of wind farm noise immission levels. The basis for this calculation is the use of



the ISO 9613-2 methodology, but adopting a clearly specified set of input parameters for the calculation, all of which are set out in SB20. The appellant has followed the methodology set out in the IoA GPG in all of the calculations of noise immission levels.

- 5.57 Mrs Smith expresses concern over the IoA GPG methodology, and its reliance on research reported by E&C, which Mrs Smith asserts, does not support the approach recommended in SB20 of the IoA GPG (SM 2 paragraphs 7.5 and 7.6; SM 3 Appendix 8 page 33). Mrs Smith considered that, of the total 6 wind farm sites for which results were reported by E&C, only Site F could be comparable to Orby Marsh. For this site, reference to Table 2 reveals that the calculated noise immission level using ISO9613-2 (G=0.5) was 1 dB below the measured level. Mrs Smith agreed that it was important to ensure that the calculated results reported in the E&C paper were directly comparable with the calculated noise immission levels that would result from using the IoA GPG SB20 calculation methodology.
  
- 5.58 Exploring the potential differences between the calculations reported by E&C and the IoA GPG SB20 method, Mrs Smith said that E&C had: used a receiver height of 1.5m as compared to the IoA GPG which recommends the use of a 4m receiver height (CD J 6, paragraph 4.3.8); and calculated the noise immissions as LAeq levels as compared to the IoA GPG which stipulates the use of LA90 levels (CD J 6, paragraph 4.2.5).
  
- 5.59 Mrs. Smith agreed that the adoption of the higher receiver height in accordance with the IoA GPG would result in calculated noise immission levels some 2 dB(A) higher than those calculated by E&C. It was also agreed by Mrs Smith that the conversion from LAeq to LA90 levels would result in calculated noise levels approximately 2 dB lower than those calculated by E&C. Therefore, the combined effect of these 2 factors would be to introduce no overall change to the results of E&C when compared to the corresponding results obtained from the IoA GPG procedure.
  
- 5.60 The final point of potential difference relates to the manner in which the source levels for the wind turbines had been addressed. The IoA GPG advises that the source levels used for the turbines should include an allowance for uncertainty (CD J6, paragraph 4.3.6). In the E&C paper the source data adopted for the calculations was typically measured for 2 of the installed turbines and the average measured sound power level used for their results (SM 3 Appendix 8, page 31). Whilst E&C refer to having measured uncertainty levels as part of their measurements of source sound power level, they have not included any such uncertainty in their calculations. Rather, they have merely used the small measured uncertainty levels of typically less than 1 dB(A) to indicate that calculations which do adopt uncertainty margins, e.g. the IoA GPG methodology, based on manufacturer's guaranteed sound power levels "*will therefore be more likely to over-predict actual noise levels*". Indeed, the IOA GPG provides an indication of 2 dB as to the sort of margin that may be added in this manner. This was reflected in the adoption of warranted source sound power levels in the noise assessment for Orby Marsh (CD J6, paragraph 4.3.6 & APP 11, paragraph 5.4).

5.61 The adoption of these warranted source levels would result in the IoA GPG calculation methodology over predicting the noise immission levels by 1 dB(A), rather than the under prediction of 1 dB(A) indicated by E&C own non-IoA GPG compliant implementation of the ISO 9613-2 method. Moreover, E&C note<sup>5</sup> that the actual (measured) turbine levels would have been slightly lower than those reported in their assessment had the contribution of background noise also been separately accounted for (SM3 Appendix 8). How much lower the measured wind turbine levels would have been is not known, but it provided an added degree of conservatism in the E&C research as the effect could only result in lower, rather than higher, noise levels due to the operating wind turbines.

5.62 There is nothing to support either Mrs. Smith's or MAS's assertions that the E&C paper undermines the recommendations of the IoA GPG. Therefore, it is appropriate that the IoA GPG methodology is adopted in full for the calculation of noise immission levels, and this is the approach used by the appellant.

#### Wind shear

5.63 One final point prior to leaving the issue of the appropriate choice of source sound power data is that Mrs. Smith has presented calculated noise immission results in which she has accounted for site measured wind shear by adding the effects of 2 standard deviations of wind shear to her calculations (SM 2, pages 76 to 82). This is contrary to the advice contained in the IoA GPG SGN4 which clearly states that in addition to the average shear correction "*consideration of plus and minus one standard deviation provides a reasonable account of what may occur during less frequent periods*" (CD J17, paragraph 4.3.2). Mrs Smith conceded that there is no mention of any need to extend the analysis to plus 2 standard deviations.

#### Margins

5.64 The consequence of Mrs Smith's argument for the application of 2 standard deviations of wind shear was that she could demonstrate that a minimum margin of just 0.2 dB between the calculated noise immission level and the noise limit at Rose Cottage at a wind speed of 5 m/s could easily turn into in an exceedance under conditions of extreme wind shear (APP 15, page 52, Table C.13). All noise calculations had been undertaken using the warranted source for the Gamesa G58-850 wind turbine (APP 11, page 30, Table 1). This candidate turbine was selected because it generally exhibited the highest source noise levels of the turbines listed across the majority of its operational wind speed range. The use of this turbine will necessarily result in the smallest margins between the calculated noise immission levels and the noise limits. However, APP 11 Table 1 reveals that at the "critical" lower wind speeds of 5 m/s and 6 m/s other models of turbine could be selected whose sound power levels are at least 5 dB lower than those of the candidate turbine. The small margins, therefore, are not necessarily what will occur in practice. Secondly, noise conditions are in any event specifically set to

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<sup>5</sup> The penultimate paragraph of the left hand column of text on their internal page 34.

ensure that the derived noise limits cannot be exceeded in practice. If there are exceedances then it is incumbent on the wind farm operator to modify the operation of the turbines so that the noise limits are met.

#### Cumulative Noise

- 5.65 MAS submit that the noise assessment has failed to properly account for the potential cumulative noise contributions from turbines at Croft and the offshore turbines located some 5.5km to 11km off the coast. MAS's written evidence to support this position is brief and termed a preliminary briefing rather than final evidence on the topic (SM 14).
- 5.66 MAS's note provides insufficient detail on the precise approach adopted and the underlying assumptions made to allow its results to be replicated (APP 14 paragraphs 4.3 to 4.9). Despite requests for more detail, MAS did not respond or convert the preliminary briefing into fully fledged evidence. It was not until MAS gave evidence in October 2014 that any explanation was provided of apparent discrepancies in the turbine co-ordinates, and that explanation was extraordinary (APP 14 paragraph 4.4). MAS said that the Orby Marsh turbines and the offshore turbines and the noise assessment locations had to be relocated in order that the cumulative noise effects could be modelled. While such movements may have been necessary for its model, this hitherto unexplained approach provided the appellant with no useful basis on which to evaluate the MAS's material (APP 15 Section 4).
- 5.67 The appellant does not accept that noise from wind farms located from 5.5km offshore would realistically cause any noise issues to receivers located 3.5km or more inland. The key issue when calculating the contribution of offshore wind turbines to the cumulative noise immission levels at the inland locations around Orby Marsh is the lack of definitive advice on how such a calculation should be performed. The IoA GPG contains the good practice methodology for the calculation of wind farm noise propagation predominantly across land (CD J6, Section 4.3). This advice is supplemented by IoA SGN 6, which extends the calculation methodology to allow for the propagation of noise from onshore wind turbines across larger bodies of water (CD J19). However, the scope of application is set out in SGN 6 at paragraph 1.2.1 as providing: *"additional information on the calculation of noise propagation over bodies of water such as for a turbine close to the shore, or over large areas of onshore water such as lakes and reservoirs."* with the specific advice at paragraph 1.2.2 that: *"This SGN does not cover noise propagation for offshore wind farms"*.
- 5.68 APP 15 Appendix G, is a review of the main factors affecting noise propagation over larger distances outdoors and a discussion of the research underpinning advice in SGN 6 for noise propagation from onshore wind farms over water which provides an equation to assist calculation (APP 14 paragraph 4.11). Confusingly, the bracketed comment included in SGN 6 paragraph 2.2.3 states that the equation can be applied if the turbine is offshore, despite this option having been specifically scoped out of the applicability of SGN 6 in the IoA GPG. However, based on the underpinning research there is no fundamental reason why the equation should not be used

to calculate noise levels from offshore wind turbines to receiver locations along the shoreline.

- 5.69 However, the calculation method falls down if it is applied to receiver locations that are more than a few hundred metres inland from the shoreline, as is the case here (APP 14 Appendix G). This is because there are very different noise propagation characteristics over water and over land resulting from the presence of 2 factors. These are that the sea surface is acoustically highly reflective under all conditions, quite unlike the acoustical properties of the ground and a meteorological feature called the Low Level Jet (LU) can occur at relatively low altitudes over the sea and persist over large distances.
- 5.70 It is only when the atmospheric conditions are such that an LU is present that an effective sound propagation “tunnel” is formed between the acoustically hard sea surface and the LU. The sound becomes trapped in this tunnel and propagates cylindrically at a lower attenuation rate, -3 dB per doubling of distance, than under circumstances when an LU is not present and the sound instead propagates spherically, -6 dB per doubling of distance. However, on reaching the shoreline, 2 key changes occur to modify the established over-sea propagation characteristics. First, the surface changes from water to land and second, the atmospheric conditions necessary for the over-sea LU to be sustained break down. Thus, both the factors required to sustain the tunnel in which the cylindrical sound propagation over the sea has been occurring disappear. The consequence of these is that the wind turbine noise begins to decay with distance much more rapidly as it propagates over the land than over the sea (APP 14 Appendix G).
- 5.71 The calculation of the propagation from the turbine located on the shoreline can properly be undertaken using the calculation procedure set out in the IoA GPG as this is precisely the situation to which it relates: namely propagation to a receiver location over land from an onshore wind turbine (CD J6, Section 4.3). In contrast, there is no such accepted good practice pertaining to the calculation of the propagation from the offshore wind turbine to the inland receiver location. What is apparent from the results presented in Figure A.11, however, is that the use of the methodology contained in IoA SGN 6 leads, as expected from the discussion contained in Appendix G, to results that clearly overstate the noise levels at the receiver (CD J19, paragraph 2.2.3). In the situation shown, the calculated level is higher from the offshore located turbine at a total separation distance of approaching 10 km (the green solid line on Figure A.11) than when the same turbine is located on the shoreline at a total separation distance of approximately just 4 km (the blue line on Figure A.11), even accounting for the additional onshore effects as an “add on” to the IoA SGN6 calculation procedure only
- 5.72 APP 15 Figure A.11 provides an illustration of using the IoA SGN 6 calculation procedure outside its range of applicability, without properly accounting for the change in propagation characteristics as the sound travels across the shoreline onto the land. The result is an overstatement of the noise levels at the receiver. The calculated level is higher from the offshore located turbine at a total separation distance of approaching 10km (the green solid line on Figure A.11) than when the same turbine is located on the shoreline at a total separation distance of approximately just 4km (the blue line). Even

accounting for the additional onshore effects as an “add on” to the IoA SGN 6 calculation procedure only reduces the calculated levels by approximately 2 dB (green dashed line). What is missing in the above is the modelling of the actual effects as sound propagates from offshore to onshore across the shoreline. Such effects would be expected to significantly reduce the calculated noise immission levels at inland locations below those calculated using the equation provided in IoA SGN 6.

- 5.73 The oral evidence given by MAS in relation to the “science” of the propagation of noise from offshore wind turbines was hopelessly complex, explained in such a way that nobody except the appellant’s noise consultant could react on the day. MAS’s lengthy explanation of the research papers of Johansson and Boué did not help the inquiry at all (Docs 76 & 77).
- 5.74 The appellant’s noise consultant has not as MAS asserted “cherry picked” material from the Johansson and Boué research papers. The appellant’s noise consultant explained exactly why he took the view in his proof that attenuation beyond the shoreline to locations inland would increase beyond (simply) the “shoreline effect” of 2 or 3 dB asserted by MAS. Leaving aside all of the technical arguments this situation is self-evident. If no more losses were incurred other than the 2 or 3 dB reduction due to the effects of the shoreline itself, then how far would the sound travel inland before it begins to reduce: 5km, 10km or 100km? The appellant’s noise consultant clearly explained the supporting evidence behind his reasonable assertion that noise levels would decrease by 15 dB or more between the shoreline and locations 3.5 km or more inland, and none of the evidence referred to by MAS undermined the appellant’s position.
- 5.75 The appellant’s noise consultant also made it clear that the noise immission levels of the offshore turbines asserted by MAS for residential receptors in the vicinity of Orby Marsh were far too high and much more likely to be in the 20’s of dBs rather than 33.6 dB at Slackholme End House (SM 14 Paragraph 1.11 Table). Whilst not accepting MAS’s proposition that noise from wind farms located from 5.5km offshore will cause any noise issues to receiver locations 3.5km or more inland, be this on a cumulative basis or in isolation, the appellant carried out an assessment (APP 14 paragraphs 4.25 to 4.36; APP 15 Appendix H). The calculations indicate a worst case cumulative addition of 0.5 dB onto the calculated noise level due to Orby Marsh turbines only of 30.4 dB(A) or less. Furthermore, the calculated levels used to reach this conclusion are based on assumptions concerning noise propagation effects that simply will not occur in practice.
- 5.76 It is most unlikely for common sense reasons as opposed to technical reasons that noise immissions from Orby Marsh will be 33.4 dB(A) at Slackholme End House at 1.8km and that a very similar level of noise would be received at the same property from offshore wind farms at 9km and more. The propositions of MAS are really quite absurd leaving aside all the complexities of the technical discussions relating to the calculation of noise propagation to inland locations from offshore wind turbines, the most compelling evidence relates to the practical consequences of the resultant calculated noise levels.

- 5.77 The noise levels at locations in the vicinity of Orby Marsh due to the operation of the existing offshore wind turbines are claimed by MAS to around 34 dB(A), and possibly even higher. Similar upper noise levels to those claimed by MAS for the offshore wind turbines are being ascribed to the operation of the Orby Marsh turbines (APP 15 Table C.11). However, these levels of noise from Orby Marsh are being objected to on the basis that they would unacceptably impact on the existing tranquillity of the area. However, it is clear that there is something wrong in this argument. If noise from the Orby Marsh turbines is to impact on the area in the manner claimed, then how can the offshore wind turbines already be producing the same levels of noise yet remain inaudible on the only evidence on this rather important point from Mrs Smith?
- 5.78 And at the end of the day does MAS's evidence matter at all? Compare APP 15 Table C11 with tables below paragraphs 1.11 and 1.13 in MAS's evidence SM 14. These show the only exceedence of derived levels would be 1.5 dB at Wyche Farm at 6m/s (with a ground attenuation of  $G=0$ ). And if, as advised in the GPG for propagation over land, ground attenuation is  $G=0.5$  then there would be no exceedence at any of the properties identified by MAS or indeed on its own evidence.
- 5.79 Finally, despite the observations of MAS about the possibility of one or more properties being downwind of both Orby Marsh and the offshore wind farms at the same time, the latter at distances of between 9.5km and 14km, it is in fact clear that none of the properties in question would be receiving downwind noise from Orby Marsh and the offshore wind farms at one time. And as advised in the IoA GPG noise received upwind would usually be 10 dB less than noise received downwind, providing yet further evidence that there could be no possible material cumulative impact of Orby Marsh with the offshore wind farms (CD J6, paragraph 4.4.2).
- 5.80 The work of MAS represents a hastily compiled and incomplete piece of evidence that has no credibility. Even on the evidence of MAS, there is no demonstrable material cumulative impact.

#### Conclusions on the Noise Evidence

- 5.81 The appellant's noise evidence is to be preferred in all respects to that of Mrs Smith and MAS. Subject to the imposition of appropriate conditions, there is no evidence base for a concern about operational noise emissions. This is not surprising given the significant separation distances relative to the size of turbine proposed and wind farm proposed in this case; the Orby Marsh development is unusually distant from the nearest residential properties.
- Lincolnshire County Council
- 5.82 The focus of LCC's case is that harm to the landscape would impact negatively on the tourism industry of Lincolnshire, "*particularly the Lincolnshire Wolds AONB and the coastal resort of Skegness and surroundings*". (LCC 3 paragraph 1.9). However, even LCC does not convince by its own case, when it accepts, "*...that the issue of tourism is and never was going to be a game-changer*" (Doc 95, paragraphs 30 & 31). This

means that LCC accepts that the appeal should not be dismissed because of fears of adverse impacts on the tourism industry.

- 5.83 LCC's landscape evidence adds little to that of the Ipa (LCC 1 & 2). LCC's landscape advisor was appointed in November 2013 for a February 2014 inquiry. Therefore, while the proper degree of field work was carried out LCC's advisor would, unlike the appellant, only have had one season to become familiar with the area. LCC notes that the site is not covered by any national or local designation and is located between 2 areas that are popular tourist destinations i.e. the coastal resorts to the east and the AONB to the west (LCC 1, paragraph 5.4.1). It should be noted that the evidence focussed entirely on tourism impacts in the coastal resorts and on tourism in Lincolnshire generally, but without any attention to the number of tourists visiting the AONB or, in comparison with the coastal resorts, the value to Lincolnshire of tourism within the AONB.
- 5.84 LCC advises that Orby Marsh is located between "*areas that are much visited by tourists, the seaside resorts and the Lincolnshire Wolds*" (LCC 1 paragraph 6.5.1). In this context it is suggested that there would be a significant number of people travelling through the area whose attention is likely to be focussed, at least in part, on the landscape. However, no evidence was provided to substantiate this view. Moreover, LCC's evidence should be viewed in the context of the observations of the Ipa's planning officer in the Committee report to the effect that "*The application site is part of the coastal area of the district, but currently offers nothing to the tourist. The immediate area has limited facilities for tourists. This area is generally part of the area which tourists drive through on their way to other attractions or when meandering through the local countryside*" (CD A8, paragraph 10.42). The report concludes that from a cumulative point of view there might be an impact on tourism. Notwithstanding these points, the planning officer in his recommendation for refusal made no mention of tourism.
- 5.85 LCC confirmed<sup>6</sup> that it was concerned with the location of the wind farm and made no adverse observations on its design. The evidence related only to the cumulative landscape and visual effects of Orby Marsh with other projects and that LCC makes no objection to Orby Marsh by itself.
- 5.86 LCC's evidence drew upon the then current July 2013 Planning Practice Guide, which said that impacts can be as great in predominantly flat landscapes as in hilly or mountainous areas (LCC 1, paragraph 3.1.10 & CD D11. This it said was an indication that the consensus on the susceptibility of flat landscapes is changing, perhaps as a result of the increasing number of wind turbine developments in flat landscapes. However, LCC is unable to bring to the SoS's attention any evidence of a changing consensus in terms of the susceptibility of flat landscapes. LCC expanded on this point, whilst noting that flat landscapes are considered capable of accommodating wind turbine development because they are often associated with large scale open landscapes, that flatter landscapes increased the potential visibility of turbines (LCC 1, paragraph 3.1.11). This is not the case, the visibility of

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<sup>6</sup> X-Examination of Ms. Bolger.

- turbines diminishes with distance more quickly in flat landscapes than more hilly landscapes because of the greater effect of local screening by hedges and trees and buildings.
- 5.87 LCC quote, comments of the Inspector in a recent appeal decision which included the comment that *"...it is difficult to contemplate circumstances where a cumulative effect could be other than an adverse effect"* (LCC 1, paragraph 3.2.5). These comments are personal, unwarranted, uncalibrated and unhelpful.
- 5.88 LCC discuss landscape value without reaching any clear conclusions (LCC 1, paragraph 5.4). The evaluation of a moderate/high sensitivity to wind turbine development is based partly on *"...the value placed on the immediate adjacent landscape"* (LCC 1, paragraph 7.4.5). However, LCC's evidence provides only limited reasoning for this evaluation. LCC say that the appeal site and the landscape surrounding it have a moderate to high susceptibility to wind turbine development, mainly because of the potential for cumulative impacts. However, this confuses susceptibility and magnitude of effects. Nowhere, where LCC discusses landscape character and landscape character impacts does it discuss the sensitivity of the landscape to this type of development as a result of susceptibility and value as suggested GLVIA 3<sup>rd</sup> Edition (CD G14). Thus it is difficult to see how LCC's conclusion on sensitivity links to the discussion of value and susceptibility. Moreover, at no point does LCC's evidence address the key characteristics of the landscape defined in the East Lindsey Character Assessment (LCC 1 paragraphs 6.3.1 to 6.3.9 & CD F5). This is a major omission, given the clear advice in the GLVIA on the approach to be taken to landscape impact assessment.
- 5.89 It might well be that LCC does not wish to focus too much on LCA J1 - Outmarsh because there is lower sensitivity in this area to wind energy development. Instead LCC's evidence is an assessment which draws upon the characteristics of a variety of LCAs rather than focussing on the host LCA. There is a discussion about LCA I1- Middlemarsh), LCA G2 the AONB and LCA K1 (LCC 1, paragraphs 6.2.2, 6.2.6 & 6.2.12). This part of LCC's evidence is notable for its lack of any attention to the LCA containing the site.
- 5.90 LCC's approach to landscape impact assessment is suspect. For example, when at LCC 1, paragraph 6.2.13 refer to a moderate to high susceptibility to wind turbine development is found it is not at all clear to which LCA or LCAs is being referred to. At LCC 1 paragraph 6.3.7 the evidence focuses on ES VP 15, located in the AONB. Here the assessment states that offshore turbines have become a key characteristic of outward views defining the horizon with everything in between remaining rural. If this is correct then Orby Marsh would be consistent with an existing key characteristic of the landscape and this is an important point to bear in mind when considering LCC's evidence on the AONB Management Plan and the views towards the coast from the AONB which are described as of importance (LCC paragraph 5.4.2).
- 5.91 LCC has considerably overestimated impacts from viewpoints such as VP 15. LCC has not properly taken into account the presence of trees in the view and the fact that a much bigger panorama is available to the viewer than represented within the viewpoint photograph. Contrary to what LCC suggest,



the introduction of the Orby Marsh turbines would not make it seem as though all of the landscape from the viewpoint to the coast was defined by wind turbine development.

- 5.92 LCC observes that the landscape to the east is manmade, with caravan parks, fair grounds and holiday parks, but that the landscape to the west, while not pristine, remains predominately undeveloped countryside (LCC 1, paragraph 6.3.8). This omits reference to the nature of the countryside around the site, which contains prominent features such as the grain store silos, Skegness Stadium and the road abutting the appeal site.
- 5.93 On landscape susceptibility, LCC discusses a number of attributes of the landscape (LCC 1, section 6.2). However, each of the attributes speaks to a lower level of susceptibility to wind turbine development of this scale, and overall, it is difficult to see how LCC could reach a conclusion that the site has moderate to high susceptibility to wind turbine development of the scale proposed (LCC 1 paragraphs 6.2.2 to 6.2.12).

#### Tourism

- 5.94 LCC's findings about tourism although based on the landscape are focused entirely on the coastal resorts rather than on the AONB. LCC suggest a conflict with Policy PP7 of the AONB Management Plan. However, whilst Policy PP7 is a material consideration in that it informs the SoS of the interests which the Management Plan seeks to protect, it has no direct application here as Orby Marsh is not within the AONB.
- 5.95 LCC's evidence on tourism impacts is circumstantial and wholly derived from a study carried out in Bournemouth relating to the proposed Navitus Bay offshore wind farm. LCC's case amounts to no more than an assertion that, if one of the Navitus Bay study findings, a 14% drop in the number of visitors with an associated drop in revenue, occurred as a result of Orby Marsh then the effect on East Lindsey would be disastrous (LCC 3 paragraph 6.4). This is simply a hopeless approach to impact evidence. LCC gives no attention to the type of tourism to be found in the coastal resorts or to the extent to which the tourists in those resorts might focus on the landscape.
- 5.96 The entirety of LCC's case is built on the Bournemouth study and the 14% comes from a July 2013 report (LCC 4D (i), paragraph 15.190). This figure emerged from a summer based survey, and a figure of 6% from a Spring based survey. The figure in both cases is the percentage of visitors who said that they might not return to Bournemouth. However, 3% of summer visitors and 9% of spring visitors felt that the wind farm might make them more likely to visit Bournemouth, and simple maths shows that for those in the spring survey this would lead to a net increase in visitor numbers.
- 5.97 The report's authors draw together material from all offshore wind farms in the UK dating back to 2004 (LCC 4D (i), page 35). They found that on the basis of rolling 3-year averages for visitors, bed nights and spend there was no evidence that offshore wind farms had had any discernible adverse effect on tourism (LCC 4D (i), paragraph 15.101). The July 2013 study looked at offshore wind farms off the coast of Norfolk and Lincolnshire. The study found that one of the wind farms had become a tourist attraction in itself.

The study also found that for the offshore wind farms, at Skegness, the town experienced an increase in both visitor trips and bed nights during the period of construction and operation of these wind farms. The study also found that East Lindsey as a whole had experienced a 24% increase in the number of visitor trips, a 22% increase in the total number of holiday trips, a 16% increase in the total number of bed nights, an 18% increase in the total number of holiday nights, an increase in total spend of 15% and an increase in holiday spend of 18% between 2006/2008 and 2010/2012. These results do not support LCC's claims regarding an adverse impact on tourism.

- 5.98 Impact on tourism was an issue at the Langham appeal where comprehensive evidence was presented suggesting significant adverse effects on tourism spending and employment in an otherwise fragile economic area (CD H17). However, there, the Inspector did not consider there would be any discernible effect on tourism. That decision accords with the 2004 Orby Marsh decision and a raft of other decisions across the country, many of them in areas said to have fragile tourist economies (CD H20).
- 5.99 Since the mid-90s there have been claims that wind farms damage tourism, especially as almost all sites are in the countryside and rural tourism is a common element of the local economy. Despite the continued development of wind farms across the country, no evidence has come forward of effects in terms of a decline in tourist numbers. Cumbria and Cornwall, the Counties with the largest numbers of wind farm sites, have both achieved higher visitor numbers in recent years, with total visitor numbers continuing to rise from the mid-90s when many of the sites were first developed.
- 5.100 The British Wind Energy Association submission to an All Party Parliamentary Group Meeting on Tourism sets out the findings of several studies and surveys into effects of wind farms on tourism. These include a summary of a recent study for the Scottish Government into the potential effects of wind farms on the tourism; the findings of a study by the University of the West of England for the Fullabrook Wind Farm inquiry and a summary of a 2012 study in Scotland (CDs K1, CD K2, APP 9 Appendices 2 & 3). The 2012 Scottish study was carried for Visit Scotland, the body responsible for promoting Scottish tourism. Responding to the study, Visit Scotland said that it was reassured and encouraged by the findings of the survey, which suggests that the overwhelming majority of their customers did not feel that wind farms spoil the look of the countryside. Moreover, tourism numbers in Scotland are continuing to grow despite the presence of over 2,200 onshore turbines.

#### Landscape and Visual Effects

- 5.101 The differences between the information considered in the 2010 ES and the present are: the refusal of the Langham and Baumber Wind Farms; (b) the erection of the Lincolnshire Poacher turbine; the abandonment of the Wainfleet Wind Farm application; (d) submission of the Bank House Farm application; approval of the Gayton le Marsh Wind Farm; approval for the Windy Ridge turbine; the submission of several smaller schemes within 20km at Rotten Row, Maythorpe, Middlemarsh Landfill, Pinchbeck's Farm, and Sea Lane (APP 2 paragraph 2.3). Although further off-shore turbines have been refused, consented or proposed, these are irrelevant on the grounds that if

the Orby Marsh is not acceptable with the existing offshore turbines in place, it would not become so with further schemes added.

- 5.102 The relevant baseline schemes are: Bambers, the Lincolnshire Poacher, The Croft and Windy Ridge with the offshore turbines. The relevant cumulative schemes are Middlemarsh Landfill, Bank House Farm, Pinchbecks Farm and Sea Lane. These schemes were either taken into account by the time of the previous inquiry or make no appreciable difference to previous judgements. The principal differences stem from comparing ES Volume 3 Figure 6.13 (Core Doc A2) and the map enclosed with the cumulative wireline figures at APP 4 Appendix 7A

The 2004<sup>7</sup> Wind Farm Proposal and ES

- 5.103 The 2004 scheme for twenty, 101m to tip turbines was refused by Members against officer recommendation. The 2004 appeal was dismissed because of material harm to the character and appearance of the local landscape (CD H19). However, it is important to note several key facts. These are:
- the lpa's objection to the current scheme relates solely to adverse cumulative impact;
  - the 2004 Inspector's findings that a scheme, larger in terms of the height and number of the turbines, would not materially harm "*the landscape nor the enjoyment*" of the AONB, a finding the lpa does not dispute in terms of the solus effects of Orby Marsh (CD H19 paragraph 23);
  - the 2004 Inspector's findings that the larger scheme would not give rise to unacceptable harm with respect to the visual component of residential amenity and would not give rise to unacceptable harm to the enjoyment of local footpaths, bridleways and tourism interests.
- 5.104 The appellant submitted a fresh application to the Department of Trade and Industry (DTI) in 2005 for the same number turbines as the 2003 scheme. The application was submitted to the DTI because the installed capacity proposed was more than 50MW. The lpa engaged the Environmental Dimension Partnership (EDP), to review the landscape character and visual amenity impact of this scheme (CD A15 Appendix 3). EDP visited the appeal site in December 2005 some 4 months after the turbines at Croft were permitted and were taken into account by EDP in its conclusions. The most relevant change in the local context in the time between EDP forming their opinion and advising the lpa on the 2005 scheme and the present scheme is the considerable scaling back of the Orby Marsh proposal and the addition of other schemes into the wider landscape equation.
- 5.105 Regarding the EDP assessment the principal points to note are:
- EDP is a very highly respected and experienced practice who at that time numbered amongst its partners the President of the Landscape Institute and maintained the highest standards of professionalism and integrity;

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<sup>7</sup> 2004 was the date of the Inquiry.

- The 2005 ES visualisations, which EDP reviewed in the field, contained both the on and offshore wind turbines associated with Bambers, Croft, Inner Dowsing and Lynn and potential cumulative effects were taken into account when coming to their conclusion;
  - EDP gave full consideration to cumulative matters as they were at that time and, between then and now, the Langham proposal has come and gone whilst others have entered the equation ;
  - EDP's considered opinion was that the Inspector's reasoning, which underpinned the 2004 appeal decision, was flawed;
  - EDP's considered opinion was that *"...opinions regarding this scheme will vary considerably and be strongly felt. Whilst a case could potentially be made against the scheme (20 turbines x 100m to tip) on the grounds of its overall scale, in practice, I doubt that such a case would be sufficiently persuasive to overturn the thrust of planning policy. My overall recommendation, therefore, is that the Council do not contest this application on the grounds of its effect on landscape character and visual amenity."* (CD A15 Appendix 3 paragraphs 54 & 55);
  - If EDP considered that a twenty 100m to tip scheme should not be objected to on landscape and visual grounds, then how much less harm would derive from the considerably scaled back proposal of nine, 81m to tip turbines within a similar context;
  - Since then, other on and offshore wind farm proposals have entered the frame but they would not alter the overall conclusion that the Orby Marsh proposal is an acceptable scheme in an acceptable location.
- 5.106 The Planning Officer's report on the 2005 scheme, having taken all relevant matters including cumulative considerations into account, recommended that the Council raise no objection. Members ignored this advice and EDP's professional opinion and decided to object. Due to concerns about aviation/MOD interests, the appellant withdrew the application.
- 5.107 For the 2013 inquiry, EDP were approached to revisit their report and asked whether it continued to stand by the 2005 conclusions and to consider the position, bearing in mind what was the added potential presence of further offshore schemes and those attaching to Wainfleet, now dropped, Bank House Farm and other potential proposals (APP 9 Appendix 9A).
- 5.108 The current scheme is for a different, scaled back development as opposed to the 2004 and 2005 schemes. To demonstrate that the lpa's RfR cannot be sustained, it is important to appreciate the planning officer's position as set out in his report (CD A8). One of the most important paragraphs is 10.4 and refers to the 2004 appeal decision. This says, *"This appeal decision is a material consideration that carries huge weight as it is relatively recent, it is about the same general site and it is also for a wind farm. One of the major issues for determination for this application is whether or not the concerns expressed by the Inspector have been overcome or not."*

- 5.109 Whilst the 2004 appeal decision is of some weight it does not have "*huge weight*" given the substantial difference between what was proposed in 2004 and what is proposed now. The report lacks balance in that any reference to EDP's earlier report is omitted and its independent professional opinion that the reasoning which underpinned the 2004 appeal decision was flawed. Proper consideration of these points suggests that the margin of acceptability of a scheme with less than half the number of turbines and of a smaller scale, is far greater than "*the fine balance*" suggested by the planning officer at paragraph 2.6 where it says "*It is felt that the current proposal overcomes the objection for the appeal Inspector, although this view is finely balanced.*"
- 5.110 The overriding impression given by the planning officer is that there has been only a minor tweaking of the 2003/2005 proposals, which led to the current proposal only just "sneaking in under the bar" when considered in its own right. When the broader cumulative position is then considered, which at that time included consideration of the now departed Langham proposal, the planning officer and the Members, considered that the very "*finely balanced*" position in favour of granting planning permission for the proposal tipped back in favour of its rejection. Clearly the balance was far less finely balanced than as suggested by the planning officer and that the balance should have been reported as being very substantially in the applicant's favour. The planning officer's report considered the effect of the current scheme acceptable in its own right.

#### Effects on *Landscape* Character

- 5.111 On landscape character, the ES findings remain as before although some refinement is necessary. At the regional scale, no significant character effect would arise individually or cumulatively given the widespread and more general considerations that come into play at this scale (CD A2, Volume 2 paragraphs 6.8.3.2 - 6.8.3.6).
- 5.112 At the local level, the site is located within the LCA J1 Coastal Outmarsh (CD F5). The relevant key characteristic potentially affected in the ES was: "*Some wide open views and big skies. Some views enclosed by landform, embankments or trees.*" The composition of some of the views would change to include the proposed wind farm. However, "*open views*" is not strictly speaking a characteristic. The characteristic is "openness" which, in turn, permits open views to the wider landscape under large skies. Openness would be reduced to a degree with a perception of "developed countryside" increased in the local area at Orby Marsh given the perception of the nearby large grain storage silos and Skegness Stadium with its lighting.
- 5.113 The final key characteristic LCA J1 reads: "*A predominantly intact and distinctive rural landscape with some man-made influences including a gas terminal, an oil storage facility and several wind farms*". Wind farm development is a key characteristic of this landscape type and additional wind farm development, in principle, would be consistent with this key characteristic with the overall landscape sensitivity of the Coastal Outmarsh being moderate to high. However, given that "*several wind farms*" are part of a key landscape characteristic of this extensive landscape type, the presence of another wind farm development which would maintain this

character area as a landscape with wind farms and not convert it into a wind farm landscape indicates that the sensitivity of this type/character area to this form of development would not be unacceptably infringed. This is not to suggest as the lpa do that the appellant considers that permission might be justified on the basis that "there is little left, in this location, to lose".

- 5.114 In a local sense, landscape character would be affected. A wind farm landscape would be where the wind farm would be the defining key characteristic of the landscape and perceptions of it. The wind farm would continue to exert a less dominant but locally characterising effect outwards from the wind farm landscape where the wind farm would, in combination with other principal landscape elements, give rise to a local landscape sub-type of Outmarsh with Wind Farm (CD A2 Volume 4 Appendix 6.1).
- 5.115 As distance increases from the turbines, the wind farm would be read more and more as a diminishing component of the landscape with a reducing contribution towards perception of character moving from: the determinant of it (wind farm landscape - significant landscape character effect); through the locally co-dominant/contributory stage (local landscape plus wind farm sub-type - significant landscape character effect); to the apparent (where the original baseline landscape type/character reasserts its dominance over any influence that the wind farm may exert - not a significant landscape character effect); and then would become more incidental, not a significant landscape character effect (CD A2 Volume 4, Landscape Appendix 6.1) It should be noted however that an observer may conclude that while her/his immediate surroundings are not characterised by the wind farm at that point this does not preclude a significant visual effect arising when viewing in the direction of the wind farm. Given the scale of the turbines, it is considered that, locally, a wind farm landscape would be established within and up to approximately 500m from the turbines. Beyond that range, the Outmarsh with Wind Farm would be established perhaps in the range up to one to 1.5 km (APP 4 Appendices 3A and 4A).
- 5.116 The locations of the baseline and proposed (i.e. formally within the planning system) wind farms up to some 60 km from the centre of the appeal site at the time of the submission of the planning application were shown in the 2010 ES (CD A2 Volume 3, Figure 6.13). The current situation is shown on the map attached with the cumulative wireframes at APP 4 Appendix 7A. There would be no significant cumulative landscape character effect arising with respect to the nearest local existing (baseline) wind farm development (operational and consented) i.e. Croft, Bambers, the Lincolnshire Poacher, the Windy Ridge turbine and the nearest offshore schemes over and above the effects which would arise in their own right from Orby Marsh.
- 5.117 APP 3 pages 8 and 9 Table 5.1 and APP 4 Appendix 3A shows theoretical wind farm landscapes and the theoretical local landscapes with wind farm sub-types. These show that none would coalesce with or be so close to Orby Marsh or each other so as to transform perceptions of local landscape character across the wider landscape. The landscape would remain one with wind farm development rather than being converted into a wind farm landscape between north of Bambers and south of The Croft and thus the final key characteristic of the Coastal Outmarsh would remain as before.

- 5.118 In essence, it is necessary to assess *"whether the wind farms, cumulatively would dominate or be seen to dominate the landscape character area. If so, they would become the key landscape characteristic and the landscape character would change. Where the landscape in question is rare the result would be the loss of a landscape resource. However, if there are other unaffected units of this character type, this may result in only local change."*<sup>8</sup>
- 5.119 These distinctions are important in the Orby Marsh context given: the extent of the various landscape types - especially the Coastal Outmarsh which is particularly extensive north-south, the extent of the Local and Regional LCAs and existing onshore and offshore wind farm development. It is considered that the scales of the LCAs are such that with the addition of Orby Marsh into the wider environment, wind farm character effects would remain local to their respective sites and surroundings (CD A2 Volume 3, Figures 6.1, 6.2, 6.15 to 6.18). The regional and local landscapes would remain landscapes with wind farm development and not a wind farm landscape at any scale beyond the very local in each discrete case.
- 5.120 When proposed schemes within 30 km are included in considerations in addition to the operational and consented schemes, the map of wind farm landscapes and local landscape with wind farm sub-types becomes more intensive in areas where wind farm development already exists but the "balance" with Orby Marsh remains much as before (APP 4 Appendix 4A). Bank House Farm lies to the south of Croft and the relevant cumulative effects arising would, were Bank House Farm to be consented and constructed, create a more intensive landscape with farm development south of Croft where the principal changes would be felt along with the single turbine schemes at Windy Ridge and Middlemarsh Landfill with Pinchbeck's Farm and Sea Lane beyond. To the north, the same would apply in the area between Bambers and the Fen Farm area noting the individual presences of the Lincolnshire Poacher and Mawthorpe Farm turbines (APP 4 Appendix 4A). There would be clear separation between the locally significant character effects of these 2 "groups" and the Orby Marsh proposal: the scheme considered by the lpa to be acceptable in its own right i.e. in the present baseline.
- 5.121 There is a suggestion that given the presence of these 2 "groups", there is therefore a need for "breathing space" as if these schemes would squeeze the landscape life out of, and suffocate the environment converting it from a landscape with wind farm development into a wind farm landscape. The passage through the landscape accompanied by the cumulative wireframes demonstrates that this would not arise. There is already sufficient space in this expansive landscape between Croft and Orby Marsh and the same between Bambers and Orby Marsh for the traveller to pass with ease without, for those taking an adverse position, being encumbered with unacceptable characterising impressions of wind energy development. The same applies travelling east-west and vice versa.

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<sup>8</sup> Scottish Natural Heritage Guidance: Scoping issues for Wind Farm EIA 2005 paragraph 8.7.2

## Effects on Landscape Quality and Value

- 5.122 Neither the character nor the appearance of the landscape at and immediately surrounding the site is locally distinctive other than perhaps as a result of the grain storage silos to the south of the site and Skegness Stadium with its lighting to the south-east. There is little to set it apart from many other parts of the Coastal Outmarsh LCA. It is a plain and, in parts, a bland landscape with little to differentiate it from the landscape to the north and south. Overall it is of Medium quality and possibly showing signs of decline in places. It displays no notable quotient of the attributes that tend to give rise to landscapes of high value and which are subsequently designated or more formally recognised as such. The landscape is undesignated at any level for landscape purposes.
- 5.123 That which is more distinctive in this environment is that which gives rise to a different landscape type farther to the west in the Middlemarsh LCA. The characterising effects of Orby Marsh would be localised and limited to the Outmarsh. Bearing in mind the key characteristics of the Coastal Outmarsh, they would be maintained and would be so without blurring any distinctions between the Outmarsh and the Middlemarsh or between the Outmarsh and the Naturalistic Coast.
- 5.124 The significant character effects would not extend into or across any landscape so designated. Wind turbine development is already characteristic of this landscape and therefore it is not as susceptible to noticeable change as a landscape devoid of any wind energy development would. Thus, in conventional value terms, this landscape is not highly valued, other than in terms of the local community, and is not especially sensitive to wind energy development at the district level. This judgement is based on the definition of sensitivity set out in GLVIA 3<sup>rd</sup> Edition (CD G14 Glossary page 158).

## Landscape Conclusion

- 5.125 A significant effect with respect to local landscape character would arise. This would be direct, long-term and limited to the Coastal Outmarsh. The theoretical wind farm landscape would extend outwards from the turbines for a distance of perhaps up to some 500m. The local landscape with wind farm sub-type would extend farther, about one to 1.5km from the turbines. Thus the extent of the significant landscape character effect may be up to between one and 1.5km from the turbines (APP 4 Appendices 3A & 4A).
- 5.126 Turning to the importance of this significant character effect, at the District level, given the absence of designation and the moderate to high sensitivity in general terms as judged by the LCA, the value of this landscape type in district terms is considered to be no greater than Medium. The scale of character change would be Low (CD A2, Volume 4, Appendix 6.1). Accordingly, the importance of the significant character effect would be Low/Moderate and certainly no greater than Moderate. At the more local community level, all landscapes tend to be highly valued on an informal basis and therefore the importance of the effect would increase at the local community level, perhaps regarded as a Medium scale change in the community context multiplied by High Value leading to a Moderate/Major level of importance.



- 5.127 In cumulative terms cumulative landscape effects would occur when the presence of additional wind farm development would be sufficient to extend the geographical limits of existing character effects or when the added presence of non-contiguous wind farm development would be sufficient to combine perceptions of local characterising effects into a more substantial and continuous landscape subtype or to transform/re-define the local landscape character area.
- 5.128 Orby Marsh is assessed “cumulatively” in its own right with the existing operational and consented wind farms since they form part of the baseline environment which is already there (CD A2, Volume 4 Appendix 6.3). As noted, APP 4 Appendix 7A & 8A are a series of cumulative wireframes and a commentary which update those included in the ES which, when considered with the information presented at APP 4 Appendix 3A and 4A, permits the following conclusion.
- 5.129 The baseline cumulative effects of Orby Marsh would be as set out in the ES, i.e. no significant cumulative landscape effects notably exceeding those which would arise from Orby Marsh in its own right. This focuses on the relationship between the Bambers/Mablethorpe scheme, the Lincolnshire Poacher single turbine, Croft, the Windy Ridge turbine and the operational and consented off-shore schemes.
- 5.130 As to the potential additional cumulative effects of Orby Marsh i.e. the baseline wind turbine developments in conjunction with other proposed wind farms whose applications have entered the planning process i.e. those to the north and north-west of Bambers/Mablethorpe, Mawthorpe Farm, Bank House Farm, Middlemarsh Landfill and others to the south, those north and north-west of Bambers lie too far north for there to be any reasonable sense of landscape character interaction. Bank House Farm lies beyond Croft and with the Middlemarsh Landfill turbine being at a similar distance there would be no notable significant cumulative landscape effects with Croft and Middlemarsh Landfill, and the same can be said of those farther afield whether individually or in a combined sense. No significant cumulative landscape effect would arise over and above that degree of significant effect deriving from Orby Marsh in its own right.

#### Effects upon the Visual Resource

- 5.131 Cumulative visual effects can arise in 3 reasonably distinct ways. First there is the effect of an extension of an existing development or the positioning of a new development close by such that it would give rise to an extended and/or intensified impression of a pre-existing wind farm in the landscape as seen from fixed or transitory locations. This type of cumulative effect can be referred to in some literature as falling within the “static combined/simultaneous” category. From some directions, there would be a suggestion of this in the case of Orby Marsh, when the turbines would be seen in the same context as the offshore turbines i.e. within the same horizontal spread, within the same vertical spread bearing in mind the scale of the Orby Marsh turbines being some 60% of those offshore. Thus, an Orby Marsh turbine at 8km might, in perceptual terms, offer a similar sense of

visual occupancy as an offshore turbine at 12 to 14km. However, at these distances the cumulative effect would be visually insignificant.

- 5.132 Second, a cumulative visual effect can arise through an increase in the perceptions of wind farm development as seen from fixed points from which more than one wind farm would be seen in different parts of the landscape. Sometimes this is disaggregated between situations in which the viewer holds her or his head still or moves it. This latter point seems to be a somewhat unnecessary distinction given the tendency for viewers to look around the landscape, notably where panoramas are available. This form of cumulative visual effect would occur with Orby Marsh.
- 5.133 Third, an increase in the incidence of sequential perceptions of different turbines can occur through the recurrence of images and impressions arising from developments which are located at various points in the landscape and which are encountered when moving through it as would occur with Orby Marsh (APP 2 Table 5.2 page 12).
- 5.134 Concerning the first form of potentially significant cumulative visual effects, there would be some potential to perceive Orby Marsh, from a distance, as modestly intensifying the presence of the offshore schemes, rather than the offshore schemes appearing to be brought onshore by Orby Marsh. This would be more likely when dropping down from more elevated locations. As such, at a distance and from a relatively low elevation, Orby Marsh would tend to recede and be absorbed into the offshore backdrop. The first type of effect would not arise to any notable extent however between Orby Marsh and any of the existing or proposed on-shore schemes including the Lincolnshire Poacher and Bank House Farm.
- 5.135 Concerning the second form of potentially significant cumulative visual effects i.e. seeing more than one wind farm from fixed viewpoints across the landscape is addressed in the following manner. First, CD A2 Volume 3, Figure 6.10 has been studied in respect of the Orby Marsh assessment viewpoints. Second, a series of cumulative wireframes based on a bare earth approach has been prepared (CD A2 Volume 3, Figures 6.12.1 to 6.12.23). Third a final set of cumulative wireframes has been included at APP4 Appendix 7A. These bare earth wireframes have been produced taking no account of intervening vegetation, built form or local micro-topography such as cuttings and embankments. They assume potential lines of sight to those wind farm elements that have been illustrated assuming an entirely bare land surface, Fourth, the viewpoints have been revisited in order to identify what would or would not be potentially visible in winter conditions and a judgement made as to the additional effect of adding Orby Marsh (green turbines) into a development scenario which includes all existing and proposed wind farm developments (APP 4 Appendix 8A).

#### Fixed Viewpoint Receptors

- 5.136 The fixed viewpoint assessments are in CD A2 Volume 4, Appendix 6.8 and are based on the 180/360 degree wireframes (CD A2 Volume 3, Figures 6.12.1 to 6.12.23) interpreted in the field along with consideration of the individual ZTVs and then re-presented and reinterpreted in APP 4 7A and 8A. The assessment of individual effects arising was addressed in the 2010 ES in

the first instance from the range of agreed representative viewpoints. Thereafter, the judgements formed the basis for extrapolating the findings and assessing the potential effects from a wider range of locations across the landscape. The detailed assessments taking other wind turbine development into account are set out in CD A2 Volume 4, Appendix 6. 3 and summarised in CD A2 Volume 2, Table 6.1.

- 5.137 Concerning the agreed representative viewpoints, there are no obvious, specific scenic viewpoints in the area although there can be wide panoramas from scenic areas in the Wolds and along the coast (APP 4 Appendix 10A). The landscape of the marshes and coast and many views of it accommodate large agricultural buildings, silos, wind turbines, with many more offshore, transmission lines and pylons, and both substantial blocks of woodland and smaller clumps of trees. Together with many dispersed settlements and dwellings in the countryside, plus the coastal settlements and their attractions, these give rise to punctuated skylines above plain landscapes under overarching skies. The more attractive landscape of the AONB is valued by residents, visitors and potential visitors.
- 5.138 The representative viewpoints reflect both the day to day life of the area mainly with respect to residents and those travelling through the landscape for recreational purposes - chiefly walking, cycling and riding and visiting the coast and its facilities. Given the number of roads and tracks that traverse the area, their twists and turns and that they are open for reasonably long stretches with gappy sections elsewhere, it was deemed wiser to consider viewing the proposed wind farm from many sectors of the compass and to relate this where possible to roads, settlement and footpaths in the marshes, towards the coast and in the east facing southern sections of the AONB.
- 5.139 The 23 ES viewpoints were agreed with the lpa as providing representation of both local landscape character and views towards the turbines from a range of roads and footpaths. Notwithstanding this agreement, it is curious that the lpa, sought to query<sup>9</sup> this at the inquiry, given that it was acknowledged by the lpa<sup>10</sup> that at no stage during the application process had it requested additional viewpoints. The selected viewpoints were deemed sufficient for assessment purposes and no Regulation 19 request for further viewpoints was made. This is an invented attack for the purposes of the inquiry.
- 5.140 In the first instance, the nature of the change arising both in relation to the landscape context as experienced at the viewpoint and in the view itself was addressed before moving on to consider the more general matter of landscape and visual effects arising. The results of the assessment, carried out at each of the viewpoints, were extrapolated across the landscape and the findings incorporated along with further visual assessment carried out from the wider range of points and set out CD A2 Volume 4, Landscape Appendix 6.6 cross referencing to CD A2 Volume 3, Figures 6.8 and 6.9. The visual effects assessment was carried out assuming that the effects arising would be experienced under clear weather conditions with a high level of

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<sup>9</sup> Doc 94 paragraph 12 & X-Examination of Mrs Stevenson.

<sup>10</sup> X-Examination of Mr Russell Vick.

visibility and assuming blade movement face on to the viewer. Based upon the changes arising as experienced at or viewed from the representative viewpoints and as subsequently extrapolated into the wider landscape, there would be clear effects arising in terms of visual amenity.

- 5.141 The detailed assessment from the representative viewpoints is contained in CD A2 Volume 4, Appendix 6.3. When they are considered alongside the updated cumulative wireframes, this permits general conclusions to be drawn. Concerning significant visual effects, these are likely to be found within a radius of up to some 3 km to 4 km of the turbines at most, possibly less than this. Within this range, and from open viewpoints from which the great majority of the wind farm would be visible, the magnitude of change is seldom likely to drop below Medium. For High Sensitivity receptors the level of change would therefore be Moderate/Major or greater i.e. significant. Those viewpoints which would fall within the range of potentially significant visual effects or just beyond include VPs 3, 4, 13, 15, 19, 20 and 21 with 8, 14 and 22 slightly farther away (CD A2 Volume 3).
- 5.142 What they demonstrate is that, other than VP 14 in the AONB, none are associated with highly valued landscapes at the District scale. However, even at VP 14 no significant visual effect would arise. Here, there is a strong wooded influence which restricts viewing opportunities locally close to the viewer from place to place or, limits what would be seen of the proposal by virtue of its intervening presence.
- 5.143 Within the range 3/4 km up to 7/8 km again from open locations from which the great majority of Orby Marsh would be visible, the magnitude of change would drop below Medium towards Low and then towards 12 km to 15 km from Low to Negligible. Beyond that range, Orby Marsh is only likely to be perceived in clear visibility conditions and seen as part of the wider landscape composition although the movement of blades may still be discernible. Beyond 12 km to 15km or thereabouts, Orby Marsh is only likely to be seen in very clear visibility conditions and either when the viewer deliberately searches for the feature or when weather conditions are such that it may be highlighted against its surroundings or views are orientated so as to face Orby Marsh as a focus. At these ranges, Orby Marsh is likely to be seen as a minor, subordinate element of a wide landscape composition.

#### Residential Amenity

- 5.144 An adverse effect on the living conditions of residents around the site is not part of the lpa's RfR or its subsequent case. For the ES, a large number of individual and small clusters of residential properties were visited and judgements made from publically accessible vantage points (CDs A2, Volume 4 Appendix 6.6 & Volume 3 Figure 6.8).
- 5.145 Whilst some residents may feel that their properties may be less pleasant places to live, none would be converted into unpleasant places in which to live. None of the dwellings would fail the tests relating to residential visual impact as set out in the Carland Cross and Burnt House Farm appeal decisions and as such the public interest test is not engaged (APP 2 page 15, paragraphs 5.43 to 5.47 & APP 4 Appendix 5A).

### Leisure and Recreational Facilities

- 5.146 There is no need to change the conclusions set out in the ES either in respect of Orby Marsh individually and cumulatively.

### Particularly Valued Visual/Recreational Resources

- 5.147 The same conclusion applies with respect to the particularly valued visual resources that were highlighted during the scoping process and which were addressed in the ES: local residential amenity and the amenity offered by valued landscapes for example Gunby Hall, Well Hall and the opportunities for views outwards from the AONB which would not be significantly affected.
- 5.148 The potential effects with respect to Gunby Hall and Well Hall are set out in CD A2 Volume 4 Appendix 6.6. The effects with respect to views from the AONB are dealt with from VPs 11, 14, 16 and 17 (CD A2 Volume 3, Figure 11 & Cd A2 Volume 4, Appendix 6.6). At longer distances, VPs 16 and 17, the magnitude of the change arising would be too small to give rise to a potentially significant effect. At VP 14, on the edge of the AONB some 4.7 km from the nearest turbine, the magnitude of change would be Low/Medium giving rise to a change of between Moderate and Moderate/Major significance without crossing into the range of a significant visual.
- 5.149 The AONB the Management Plan has recently been published (LPA 7 Appendix 3). The outstanding qualities are: a unique physiography (geology and topography); a scenic working landscape; a major archaeological resource and a valued cultural landscape. The Plan at Table 1 refers to some 28 special qualities under various headings of which only one is relevant here, i.e. "expansive, sweeping views". This applies mainly within the AONB. Appendix 3 to the Plan identifies key local AONB features, as opposed to special qualities, associated with the 4 local landscape character areas. The most relevant local landscape character area in this case is the South-Eastern Clayland. The relevant key local AONB feature is "*views across the Middle Marsh to the coast*". Viewers in this, the nearest section of the AONB would not be subject to a significant visual effect arising from Orby Marsh.
- 5.150 APP4, Appendix 7A includes updated cumulative wireframes which have considered in the context of the judgements set out in the ES. What is also important to note is that the change arising in the view would be seen in the context of a landscape that is perceived to be physically separate from and different in amenity resource terms to that of the AONB and the fringing AGLV and one where wind farms/turbines are already part of a key landscape characteristic (CD A2 Volume, 3 Figure 6.3 & CD F5). The change would be located in views of a landscape already subject to perceptions of such development.
- 5.151 Accordingly, the more general recreational amenity to be enjoyed in the AONB would be substantially unaffected noting the large areas which sit in "visual shadow" (CD A2 Volume 3, ZN Figures 6.4 - 6.7). Thus, there would be no significant adverse effects arising with respect to the amenity to be enjoyed in the AONB. Second, there would also be no significant effects arising in terms of views out from the AONB towards the north, west and south. Third, whilst there would be a change in the composition of part of the

view outwards to the east, north-east and south-east the change arising would not be visually significant even from the southernmost part of the AONB north of Gunby Hall. Concerning the potential effects with respect to the AONB, it should be noted that Natural England, whose remit it is to advise the Government and Ipsas concerning statutorily designated landscapes, has not objected to Orby Marsh.

- 5.152 The relevant significant effects with respect to visual amenity would therefore largely be confined to local public rights of way and the roads which pass through the significant visual effects range. None of the footpaths or bridleways form part of any national trail or promoted route. As such, it would be mainly local residents out walking or riding who would be most affected or visitors to local villages.
- 5.153 It is also important to bear in mind the words of the officer report paragraph 10.42 with regard to tourism interests (CD A8). Here, it notes that the appeal site is part of a coastal area of the District that currently offers nothing to the tourist. The immediate area has limited facilities for tourists. The area is generally part of the area within which tourists drive through on their way to other attractions or when meandering through the countryside. Those enjoying walks in the AONB and in the AGLV would be doing so in a part of the landscape which lies beyond the range of significant individual or cumulative visual effects and certainly beyond cumulative landscape effects.

#### Elevated Vantage Points

- 5.154 Concerning elevated vantage points, there are no specifically promoted viewpoints to which attention has been drawn on OS Maps or publicised in local publications or canvassed by the Ipa other than the previously mentioned LPA VPs A, B and C. It is assumed therefore that no important or highly valued vantage point panorama viewers would be subject to significant visual effects in respect of Orby Marsh either individually or cumulatively.

#### Linear Route Receptors

- 5.155 Linear route receptors are those viewers engaged on trips by main road, minor road, cycle trail or on promoted routes through the landscape. In this case there are no promoted long-distance routes or national cycle trails which would fall within the range of any potentially significant visual effects. There are, however, locally promoted routes which do, chiefly sections of the Wainfleet to Alford Cycle Route and the Burgh le Marsh Cycle Trail, which in some cases follow the same road (CD A2 Volume 3, Figure 6.9).
- 5.156 What is relevant in the current context compared to what has been set out in the ES is the effect on sequential visual effects i.e. the visual effect of Orby Marsh on viewers when travelling through the landscape. What is of particular note is that Orby Marsh would give rise to significant visual effects only in respect of a relatively short section of the A158 east and west of Burgh le Marsh from the by-pass. For most road users i.e. those in vehicles as opposed to cyclists, who for one reason or another have chosen not to pass through Burgh le Marsh, the experience would be short - a matter of minutes - with the reaction likely to vary between positive and negative. In any event, the relatively short duration would ensure that such effects as may be

experienced would not be such as to condition the overall experience of the journey. The same judgement applies to any other perception of the wind farm from any of the other 'A' class roads farther afield.

- 5.157 This judgement applies also bearing in mind the existing visual presence of turbines at Croft, the Bambers turbines and those which are offshore and which are seen from place to place across the landscape. The Croft turbines are more readily apparent from parts of the A158 and the A52. The Bambers turbines are more obvious from parts of the A157, the A1104, the A1031 and the A1111. The offshore turbines can be seen from many of the A roads from place to place. The Gayton le Marsh scheme lies well beyond Bambers, the Wainfleet scheme has gone and the Bank House Farm scheme lies to the south beyond and to the south-east of Croft with the Middlemarsh Landfill turbine to the south of the site. There is of course no certainty that any proposed scheme will be consented and constructed. As such, given that there would be no significant cumulative effects arising over and above Orby Marsh in its own right between Bambers, Orby Marsh and Croft, the same must apply with respect to schemes and turbines farther afield. If there are cumulative concerns to be addressed then they are most likely between Croft, Middlemarsh Landfill, Bank House Farm and the proposals to the south. Only a weak visual relationship would exist between Orby Marsh and the single turbine that comprises the Lincolnshire Poacher turbine in the AONB as well Mawthorpe Farm as well as having regard to the further, more distant off-shore schemes.

#### B Roads, Minor and Unclassified Roads

- 5.158 The relevant B class roads are B1449 Bilsby to Mumby; B1195 Wainfleet to Spilsby and the B1196 Alford to Gunby. Significant visual effects would be experienced from sections of the latter. Again, as with the A class roads, the judgements are based on a baseline taking into account the variable visual presence of the Croft, the Bambers and the offshore turbines. Bringing the proposed schemes into account, no significant visual effects would arise with respect to the passage through the landscape on these routes other than in the vicinity of the appeal site but this would not be such as to condition the experience of the journeys overall in a cumulative context.

#### Promoted Routes and Other Public Rights of Way

- 5.159 No change is required to the conclusions in the ES assuming the further potential presence of the Bank House Farm, Mawthorpe Farm, Middlemarsh Landfill and the other proposed turbines to the south.

#### Landscape Trajectory - Climate Change

- 5.160 Climate change is occurring and the East Lindsey landscape is not immune to climate change effects. These effects are already being experienced with respect to many aspects of the environment upon which much of our perception of the landscape depends. This is recognised across a broad range of landscape domains from the coastal areas to the rural uplands and with terms of cultural heritage with potential damage to ancient burial sites, historic buildings, parks and gardens. Tackling climate change is a necessary condition for sustainable development and wind farm development, in its role

in reducing carbon dioxide emissions, is a mitigation measure to be set against perceived adverse landscape and visual effects.

- 5.161 Natural England (NE) recognises that, "*Climate change represents the most serious long-term threat to the natural environment and that there is an urgent need to reduce greenhouse gas emissions if we are to avoid potentially catastrophic impacts on the natural environment.... There is a consequent need to support low carbon energy developments in appropriate locations to reduce the risk to the natural environment from climate change.*" (CD A15 Appendix 8). This general thrust has also been made in a joint statement from the RSPB, CPRE and the National Trust (CD A15 Appendix 10). NE's policy position is clear; wind energy developments should be "*appropriately designed and sited*", and "*should be of an appropriate height, form and scale and should be guided towards locations that avoid unacceptable impacts on the natural environment.*" (CD A15 Appendix 8).
- 5.162 Changes within the landscape cannot be predicted with certainty. It is impossible to be quantitative about potential, however it is reasonable to assume that some effects will be direct and relatively immediate as events happen, i.e. flooding, drought, fires and some will be direct but biodiversity change, changes in farming and forestry e.g. the possibility of less intensive land conversion to more intensive uses in the marginal uplands. Some changes will be indirect e.g. changes in soil and water regimes leading consequentially to erosion/shrinkage and subsequently to damage to important elements in the built environment and the cultural heritage resource or what might be termed the inventory of heritage assets.
- 5.163 Whilst some consider the change arising from the introduction of the turbines to be harmful, and fail to preserve, protect or conserve landscape character or the environmental assets that contribute to character, they are failing to perceive the pull in the other direction referred to above. Wind energy development can, in some small way, be regarded as a measure which assists in at least protecting landscape character and tackling climate change and which others will perceive as enhancing the landscape in a general sense through perceiving positive change. Article 1 of The European Landscape Convention defines landscape as, "*For the purposes of the convention: a. 'Landscape' means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.*".
- 5.164 Clearly protecting and enhancing cultural and contemporary landscape character is of great importance but it is important to see these objectives in the round and not in a solely unidirectional manner. The effects of a wind energy proposal are not a one way street. It is valid to consider that a much greater threat to the integrity of the various elements, strands and patterns which combine to form cultural and landscape character comes more from the mounting adverse effects of climate change than from the substantially reversible effects of wind energy development. Sight should not be lost of this when considering the planning officer's report and the responses of third parties set against the findings expressed in the 2010 ES.



## Reversibility and Sustainability

- 5.165 If local landscape and visual effects arising from Orby Marsh are deemed harmful and regarded as a price to be paid, the question is whether it is a price worth paying. In terms of the landscape and visual framework the answer is "yes". Even discounting the positive side of the perception equation and discounting the diffuse benefit versus local adverse reaction equation, the question is would the visual and landscape effects of the proposed development be unacceptably harmful; the answer is "No". The landscape carries the attributes that render it more rather than less capable of accommodating wind energy development of the nature being proposed without giving rise to unacceptable effects on character (APP 4 Appendix 6A). No highly valued elements would be permanently destroyed or removed. No highly valued patterns or key characteristics would be permanently or lost indefinitely. No recreational experience would be unacceptably harmed. No residential property would be converted into an unpleasant place to live.
- 5.166 Renewable energy development, of which wind turbine development is an important and meaningful part, plays an important role in tackling climate change and therefore in minimising the risk of potentially catastrophic impacts on the natural environment. It is also important to remember that such significant visual and landscape effects as may arise, are not, in themselves, permanent if wind farm developments are consented subject to conditions regulating when and how they are decommissioned. Notwithstanding the debate about the use of the word "temporary", the description of 'long-term' may be preferred, concerning duration of effect, planning permission when sought for a period of 25 years places such effects arising as long-term as opposed to permanent and, given the nature of the proposal, effectively reversible.
- 5.167 Orby Marsh would be an acceptable and easily reversible addition to the landscape. As such, it would be an eminently sustainable form of development from the long-term landscape and visual resource. Orby Marsh would be an eminently sustainable form of development. One of the purposes of planning is to contribute to the achievement of sustainable development which is founded on three roles one of which is "*environmental - contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy*". The deployment of wind turbines as a means of tackling climate change is a vehicle for moving towards a more sustainable society. At the same time, deploying such development brings a tension in other directions since landscape character and visual amenity will be affected and a proportion of society will inevitably regard this as eroding the sustainability of their way of life essentially through the effect of change with respect to private visual amenity.
- 5.168 It is reasonable to conclude that the Orby Marsh environment, however highly valued informally by the local community, would not fit within the Framework classification of a highly valued landscape. Having regard to an hierarchy that would range from statutorily designated landscapes through

locally designated and then to undesignated landscapes, Orby Marsh would sit within a landscape at the lowest level of the 3-layer hierarchy

- 5.169 The almost inevitable effects with respect to visual amenity and landscape character arising from modern commercial wind turbines i.e. that there will inevitably be significant visual and landscape effects, has been accepted for many years and no doubt has been taken into account in all previous consents. The inevitable significant landscape and visual effects are implicitly recognised in all facilitating policies. However, landscape professionals need reminding from time to time that landscape and visual effects are only one consideration to be taken into account in assessing planning.
- 5.170 It must be appreciated however that, notwithstanding landscape and visual effects may be deemed significant and harmful, it is accepted that they do not have to be rendered harmless to be acceptable, a position endorsed by NE in its guidance (CD G3) and who in this case do not object.

#### Development Plan Compliance

- 5.171 Although more weight should be given in this appeal to the Framework and to other Government policy, regard must be had to section 38(6) of the 1990 Act. LP Policies A4 and C11 are relevant. On the evidence, the development would not give rise to any breach of Policy A4 since there is not remotely any unacceptable harm to the amenities of people living or working in the area. As to Policy C11 it is clear on the evidence that there will be no harm to the quiet enjoyment of the AONB and certainly no harm to the distinctive character of the designated area, so that there would be no breach of Policy C11. Thus, the development is not in breach of the Development Plan, although in the light of paragraphs 14 and 215 of the Framework restricted weight should be attached to this submission.

#### Other Material Considerations and Final Submissions

##### National Renewable Energy Policy

- 5.172 This Government and the last Government have consistently reinforced their support for renewables. No doubt this restated commitment has emerged in part as a result of the legal obligations entered into by the UK Government under the EU Renewable Directive, but the level of policy support goes beyond a legal commitment into an unshakeable realisation that renewable sources of energy should be regarded as mainstream electricity generation and are here to stay, both for reasons relating to climate change and because of a realisation that the UK must so far as is possible generate secure domestic supplies of energy, including electricity. The UK Renewable Energy Strategy, deriving from the EU Renewable Energy Directive 2009, envisages that more than 30% of our electricity requirements will need to come from renewable sources, including onshore wind if the requirements of the 2009 Directive are to be met (CD C2).

##### National Planning Policy

- 5.173 The 3 principal documents are NPSs EN-1, EN-3, and the Framework. NPS EN-3 notes that onshore wind farms are the most established large-scale source of renewable energy in the UK and that they "*...will continue to play an*

*important role in meeting renewable energy targets*" (CD D3 paragraph 2.7.1). On local environmental effects, NPS EN3 paragraphs 2.7.46 to 2.7.51 are directly relevant to the main local environmental issue in this appeal. Paragraph 14 of the Framework sets out the presumption in favour of sustainable development. For the decision maker in this appeal that presumption means that the second bullet point applies. The development plan is silent on renewable energy save in relation to targets, and policies within the LP are singularly unhelpful. Therefore, permission should be granted unless the *"...adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this framework taken as a whole..."* In terms of what follows in paragraph 14, there are no specific policies within the Framework, noting footnote 9 which relates this advice on designated areas and sites and to flood risk, which would indicate that development in this case should be restricted.

- 5.174 On a proper interpretation of Framework paragraph 109, Orby Marsh is not a valued landscape and footnote 17 to paragraph 97 makes it clear that decision makers should, when considering onshore wind proposals, follow the approach set out in NPSs EN1 and EN3. OWAG and LCC referred to the meeting of onshore wind targets by 2020 (Doc 79). However, it is clear that there is no 13GW onshore wind target, cap or quota. The need for onshore wind is unconstrained in terms of 2020 legal obligations and objectives.

#### Planning Balance

- 5.175 The latest European and UK Government policies establish a strategic need for renewable energy provision in the UK to assist in tackling climate change and ensuring security of energy supply. There is a clear acknowledgement of the key role which onshore wind will play in the portfolio of renewable energy technologies required to be deployed to meet UK targets. The policies are generally permissive in respect of renewable energy proposals in appropriate locations. Whilst there has been a great deal of rhetoric regarding onshore wind energy and on several occasions the recommendation of professional, independent, appointed persons have been overturned might seem to signal a change of policy towards onshore wind. However, a report from ComRes which focuses on the impact that political parties' views on onshore wind would be likely to have on voting amongst the electorate is instructive (CD C15). Contrary to the apparent perceptions of several Government Ministers, this survey records a high level of support for onshore wind, while a total of 75% of those surveyed either said that they would vote for a local election candidate that would support wind farms or that the issue of wind farms would make no difference to their voting habits. This pattern of views is repeated throughout the survey and this evidence should be noted in the context of evidence from OWAG.
- 5.176 It is frequently claimed by people in the position of OWAG that they speak for the majority. It is very important that it should be recorded that there is no evidence to this effect at all. Rather there is clear unambiguous evidence that many local residents support or are neutral towards the wind farm at Orby Marsh (Doc 78). Government policy has not changed since the publication of NPSs EN1 and EN3 and the Framework. With the gloss of the

PPG, this policy framework, with the development plan and Government energy policy, is the correct policy framework for this appeal.

- 5.177 The Renewable Energy Roadmap Update of November 2013 provides sufficient energy policy context for this appeal (CD C8). Figure 5 in the 2013 Update shows the acceleration in the rate of delivery of energy from renewable sources which are required in order to meet the 2020 Obligation. Figure 5 reveals that the contributions from the heat and transport sectors are not increasing significantly, thus placing greater reliance on renewable electricity, including onshore wind, to achieve the quantity of energy from renewable sources required. The Update also refers to the consistently high levels of public support for renewables.
- 5.178 Also relevant to the planning balance are the benefits of the proposal. The essential benefits of using wind energy for the generation of electricity are that it is renewable, safe and does not release any significant gaseous emissions into the atmosphere during operation. It also provides for diversity and security of supply which remain part of the Government's energy policy. Quite apart from the local benefits and the energy savings, the scheme would be a contribution towards the Government strategy of securing an ever-increasing amount of electricity from renewables as we move on to the much more challenging figures for the period up to 2020.
- 5.179 The benefits deriving from tackling climate change must not be forgotten. As the Statement of Need makes clear in the DTI's White Paper - Meeting The Energy Challenge (2007): *"New renewable projects may not always appear to convey any particular local benefit, but they provide crucial national benefits. Individual renewable projects are part of a growing proportion of low-carbon generation that provides benefits shared by all communities both through reduced emissions and more diverse supplies of energy, which helps the reliability of our supplies. This factor is a material consideration to which all participants in the planning system should give significant weight when considering renewable proposals. These wider benefits are not always immediately visible to the specific locality in which the project is sited. However, the benefits to society and the wider economy as a whole are significant and this must be reflected in the weight given to these considerations by decision makers in reaching their decisions,* (CD C1).
- 5.180 The installed capacity of a wind turbine is likely to be a maximum of 11.7MW. Calculations of the likely electricity generation of the turbines are dependent on the capacity factor. All of the targets are based on the installed capacity, while recognising that any wind farm will only produce about 25-30% of that installed capacity over the course of a year, even though the turbines will be generating electricity for over 85% of the year. The projected annual electricity output is 23,623 MWhrs equivalent to the domestic requirements of 5,451 homes
- 5.181 The turbines would make a contribution to the reduction of atmospheric pollution through annual offsetting reductions in CO<sup>2</sup> emissions equivalent to 11,018 tonnes per annum or 275,450 tonnes over the lifetime of the development, though the effects will not necessarily be felt in the immediate locality (CD A2 Volume 2 paragraph 1.4.1). Wind energy forms part of the

overall electricity supply system but has a secure place in the system such that power generated has to be taken by the grid. It will therefore generally displace other sources of generation and the nature of the system is that these will normally be fossil fuel sources.

- 5.182 While there is debate about the actual amount of CO<sup>2</sup> that a wind farm may save against fossil fuel powered generation of electricity, the reality is that the savings are not restricted to wind but apply to all forms of renewables. It is a matter of record that wind energy is the cleanest form of all the renewable energy developments in terms of its life-cycle emissions of CO<sup>2</sup> and other gases. There can be no definitive answer year on year as to precisely how much CO<sup>2</sup> each kWh of wind energy can be expected to save, but what is clear is that even with the reductions of savings as other technologies clean up their own emissions, the Government remains convinced that renewable energy has a key role to play in its overall strategy. A further key point about wind energy generation is that it is the nature of the supply system that units of electricity produced by this wind farm will displace units generated further afield by other centralised and large scale methods of generation. Embedded generation reduces the need for long distance transmission of power which produces its own losses in transmission.
- 5.183 Most of the work of site establishment, civil engineering, site cabling, the provision of construction plant, machinery and materials and site surveying is usually undertaken by local contractors relying on local labour where available. This part of the work amounts to between 25 to 33% of the total project cost. On construction, the land owner would benefit from rental payments. There would be a need for service personnel to maintain the site, with further local demands for equipment and materials. Moreover, the scheme needs to be looked at in the context of being part of a national drive for renewables which has already created a total of around 6,000 full-time equivalent jobs in the UK both directly and in supporting services and which the RES believes will produce many tens of thousands of jobs by 2020 as installation of renewables gathers pace in the UK. A new turbine manufacturing centre has recently been set up on Tyneside and a fabrication site for offshore turbine technologies has been opened in Fife.
- 5.184 A draft Unilateral Undertaking (UU) is intended to convey the commitment of the appellant to the delivery of benefits to the community as a result of the implementation of the development if it takes place. Whilst the contents of the Undertaking are not material to the decision maker's considerations, the document has been submitted because the appellant finds itself in the difficult position that the Government clearly wishes to see material benefits emerge for communities from renewable energy projects, and yet there has been no change to planning law or policy which converts such benefits into a material consideration. Therefore, the appellant feels obliged to draw the SOS's attention to its wish to benefit the community as a result of the development.
- 5.185 Turning to the Framework, relying on paragraphs 14 and 98, the development should be approved because it has been shown that such adverse impacts as arise, which are inevitable with any wind farm of this scale, are acceptable, or can be made acceptable, in terms of the conditions which have agreed and proposed. This development would give rise to

significant and quite likely adverse landscape and visual effects. However, there is not an endless supply of appropriate wind energy development sites. Numerous interdependent limitations, e.g. aviation, noise and birds, ensure that the apparent endless supply of wind energy development is anything but that.

- 5.186 These factors, coupled with such strong support from Government for renewable energy generally mean that, whilst need does not override all, a refusal of planning permission should only result if there is something quite fundamentally and obviously wrong with a proposed development. If, for example, there would be a serious impact on residential amenity such that there would be a failing of the "Lavender Test" then it would be hard to argue persuasively that planning permission should be granted. But that is not the case here, noting the unusually large separation distances between the proposed turbines and the nearest residential properties relative to most English wind farm proposals.
- 5.187 Both in the terms of its solus effects and in terms of cumulative impacts the evidence demonstrates that Orby Marsh is acceptable both in its own right and also when viewed alongside existing and proposed wind. This is an acceptable scale of development for this location. The location of the Orby Marsh wind farm is appropriate.

## **6. The Case for East Lindsay District Council**

The material points are:-

- 6.1 No aspect of national energy policy or its requirement that a balance to be struck between renewable energy benefits and the harm that might be caused is disputed. Where relevant and subject to the imposition of planning conditions, the lpa has no objection to the proposal on its effect on residential amenity, highway safety, ecology and ornithology, hydrology, archaeology and cultural heritage, telecommunications and air safeguarding. The lpa's concerns relate to matters of landscape and visual impact.
- 6.2 The lpa's landscape assessment concentrates upon the cumulative adverse landscape and visual impacts of the proposal, in particular on the character and qualities of the local landscape, that of the AONB and the cumulative visual effects on the wide range of publicly accessible viewpoints. In assessing the landscape impact of the scheme, the lpa has used standard methodologies in accordance with GLVIA 2<sup>nd</sup> Edition and the principles of the staged approach in "Assessing the Cumulative Impact of Onshore Wind Energy Developments" published by Scottish Natural Heritage in 2012 (LPA 2 pages 22 to 25). These differ slightly to the methods used in the ES.

Comments on the Appellant's Landscape Evidence

- 6.3 The appellant's landscape and visual evidence lacks objectivity and thoroughness, a position markedly different from that of the lpa and LCC. The appellant accepts the importance to any proper landscape and visual impact assessment of carrying out site inspections on clear days<sup>11</sup>. However, the appellant has relied on work carried out by a third party who in the first instance carried out site inspections in the winter time and acknowledged that conditions, "*...were not sufficiently clear and sunny for me to ascertain the likely effect of the proposal on long distance views*"<sup>12</sup> and in the second instance did not conduct any site visit (APP 3 Appendix 9 paragraph 24).
- 6.4 The appellant acknowledges that the GLVIA highlights that the careful selection of appropriate viewpoints is an important part of any landscape and visual impact assessment<sup>13</sup>. What the GLVIA do not do is recommend the adoption of viewpoints selected in one wind farm proposal for the assessment of another. However, that is what the appellant has done here, despite the marked differences between the 2004 scheme (20 turbines) and the current proposal. Moreover, the appellant's field research does not appear to extend to the footpaths and open access roads used by the lpa and which the appellant accepted were relevant to the consideration of landscape and visual impact.
- 6.5 The appellant accepts that the cumulative impact with built wind-farms includes those situated offshore and that the extent of these has increased since the refusal of the 2004 appeal and this one. Moreover, the appellant

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<sup>11</sup> X-Examination of Mr Stevenson.

<sup>12</sup> CD A15 Appendix 3 paragraph 7.

<sup>13</sup> X-Examination of Mr Stevenson.

cannot substantiate the suggestion that the planning officer gave the impression to members that the differences between the 2004 and current schemes amounted to "...minor tweaking..." or that the members were not fully aware of the differences between the 2 schemes (APP 2 paragraph 4.6).

- 6.6 As to cumulative impact, a key difference between the 2004 scheme and this one, apart from the reduced size and number of turbines, is the presence of a large number of offshore turbines that would be seen in conjunction with the proposal, particularly when viewed from the AONB. The appellant has underestimated the effect of offshore wind where the appellant has drawn an unhelpful and unduly literal distinction between visual effect and character effect farms (APP 3 Appendix 4 and LPA 4 Figure PRV 2 & VP M). In the real world, when a person stands on the shoreline the impact of a great number of turbines out to sea and their interplay with those existing and proposed on land, is clearly quite pronounced, especially if the weather is clear.
- 6.7 The appellant's methodology appears to first consider the appeal proposal on its own and then to consider it cumulatively with others, concluding that there would be no significant additional cumulative effect beyond that which would be caused by the proposal in its own right (APP 3 Appendix 8; CD A2 Volume 3 VPs 3 & 4). This is not the intended meaning of the term "additional" in the SNH guidance or what one would expect from a common sense approach to cumulative impact (CD G6 paragraph 70). Where a land or seascape is so intensively wind farmed that the addition of further turbines would barely even be detected, then the appellant's analysis could apply. Here, the impact of the appeal proposal in combination with other wind farms on and offshore should be aggregated. Once done, this clearly results in greater impact in the case of the latter.
- 6.8 The appellant's cumulative impact methodology asserts that: *"In essence, it is necessary to assess "whether the wind forms, cumulatively would dominate or be seen to dominate the landscape character area. If so, they would become the key landscape characteristic and the landscape character would change. Where the landscape in question is rare the result would be the loss of a landscape resource. However, if there are other unaffected units of this character type, this may result in only local change."* (APP 2 paragraph 5.15). However the appellant confirmed<sup>14</sup> that this passage derives from a document which is not before the inquiry, which only ever existed in draft and which has never seen the light of day. Moreover the test proposed appears to be one which the appellant adopts, but which is unrealistically high and not reflected in any extant policy document. The lpa indicates that the proposal would result in the character of the marsh becoming one of a *"landscape with a wind farm sub-type"*.
- 6.9 The appeal site and its immediate vicinity are not subject to any statutory landscape designation. But this is not to say that they are not situated within a valued landscape, whether such value is ascribed by the community many of whom attended the inquiry) or more widely. And there is nothing in the Framework or elsewhere which prevents the protection of an undesignated

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<sup>14</sup> X-Examination of Mr Stevenson.



landscape where, for whatever reason, it is nonetheless of value and valued. The lpa say that the appeal site falls within "*a breathing space*" between existing wind farm developments and in the relatively flat Outmarsh that has few visual detractors in it.

- 6.10 The Appellant's case on visual and landscape impact seems to be that there is little left, in this location, to lose and much of that argument was predicated on a misreading of the last bullet point of LCA J1 Coastal Outmarsh. The appellant's landscape and planning evidence resists the natural plain meaning of the statement: "*A predominately intact and distinctive rural character with some man-made influences including a gas terminal, an oil storage facility and several wind farms.*" The appellant's interpretation flies in the face of normal reading of the phrase, placed in the context of all of the descriptions contained at LCA J1. Since this reading formed a key plank of the appellant's argument it is worth identifying the reasons why his interpretation must be flawed. It flies in the face of: the language and clear meaning of the last of the identified key characteristics of LCA J1; the language and clear meaning of the remainder of J1; the language and clear meaning of the document as a whole; and logic.
- 6.11 Properly analysed therefore this approach is one which serves the interests of the appellant as it creates a baseline landscape character type against which additional turbines would not produce a significant impact, but one which is impossible as a matter of language, logic and common sense. However, in any event the appellant did not claim the appeal site is located within a wind farm landscape but rather a landscape with wind farms in it. Thus, contrary to the appellant's evidence there is much of landscape value to be preserved at a local level and much to lose through the introduction of the proposal into the "breathing space" currently present at and around the appeal site.

#### *LPA Approach to Landscape Assessment*

- 6.12 The lpa's approach includes a comprehensive review of LVIA in the ES plus fieldwork observation. This assessment has identified, in addition to the LVIA viewpoints, several other viewpoints from where to assess the cumulative impacts of the scheme with other onshore wind farms, both operational, under construction and in planning. These include Bambers, Croft, Bank House Farm and Middlemarsh Landfill (in planning) and the single Lincolnshire Poacher turbine at Ulceby, together with the offshore wind farms east of Skegness (LPA 4 Figure PRV2). The proposed onshore wind farms at Louth Canal and Gayton le Marsh and the propose Triton Knoll offshore wind farm, whilst they form part of the context and a sequential cumulative assessment they are very distant and any effects are likely to be negligible.
- 6.13 LPA 4 Figures PRV 2 to 7 and LPA 2 Table 1 on page 26 illustrate the ZTVs for the various relevant wind farms and the areas where they have or would have a landscape impact and exert a visual influence. This exercise shows that the ZTVs for the Orby Marsh, Croft and offshore wind farms would have a strong confluence with less of an overlap with Bambers. This is a function of the south-eastern tip of the AONB which projects out between the Marshes to the east and the Fens to the south creating a shadow for Bambers. The Lincolnshire Poacher single turbine ZTV overlaps with that for Orby within the

AONB. What this shows is a high potential across a very large area to see at least one or more than one wind farm.

- 6.14 The lpa's assessment of static and sequential cumulative effects is broken down into 3 areas or topics; (1) the AONB; (2) the Marshes and (3) the Coast.

*Cumulative effects on the AONB (LPA 2 pages 31 to 35; LPA 4 VPs A to K; CD A2 Volume 3 VPs 14, 16 & 17)*

- 6.15 When the Inquiry opened, the July 2013 - Planning Practice Guidance for Renewable and Low Carbon Energy was extant national guidance. At that time the appellant acknowledged<sup>15</sup> that this Guidance added "...*emphasis to the importance of protecting certain receptors...*". The AONB is clearly an example of a receptor worthy of such protection. Although the introduction of PPG in March 2014 superseded the July 2013 guidance, the thrust of national guidance has not materially changed. PPG indicates to the decision maker that planning proposals for renewable energy schemes in AONBs and in areas close to them where there could be an adverse impact on the protected area will need careful consideration. In light of this and the Further Statement of Common Ground (Doc 5) it is surprising that the appellant is reluctant to accept the importance of views into and out of the AONB.
- 6.16 NCA 43 describes the AONB as a "*a multitude of fine sweeping vistas both within and from the area, entice the spirit...*" and the local Landscape Character Assessment 2009 describe LCA I1 Middlemarsh as, "*a very distinctive and very intact rural landscape with few detracting features... There are a number of sensitive viewers and several less sensitive viewers passing through the area, within the AGLV, and the adjacent Wolds AONB to the west...*"
- 6.17 These quotes illustrate the importance of views into and out of the AONB as part of its characteristics. The Lincolnshire Wolds are especially important and sensitive in the context of the East Midlands and Lincolnshire in particular, because of the rarity of this character and the complete contrast they offer to the flat plain of Lincoln, the fens and marshes which make up most of the county. However, the Wolds are not a visually dramatic or robust landscape; they are gentle, subtle and visually fragile and especially so at their edges. In the south-east, the relationship between them, the Marsh and Coast is fundamental to their character. The introduction of turbines threatens to interfere with this relationship to the diminishment of the perception of the character of the Wolds as a whole.
- 6.18 The views out from the AONB are very important. The eastern edge of the Wolds has this dramatic characteristic which is not experienced from the "inner" Wolds. What is important for the character of the eastern Wolds is that the Marsh remains to be seen as just that, a grand open sweep of rich, mixed agricultural land with few visually detracting features, between the highly contrasting foreground character of the rolling Wolds with robust woodland, a busy, developed but distant coastline strip and the sea and huge

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<sup>15</sup> Appellant's Opening Submissions, Document 6, paragraph 8.

sky merging into one another beyond. The existing wind farms already partially and negatively disrupt the purity of this visual relationship; further wind farms will certainly diminish this further, whether this is significant or not will depend on project and site specific characteristics.

- 6.19 The ES includes only 3 viewpoints from within the AONB<sup>16</sup>, Viewpoints (VP) 14, 16 and 17. Whilst these are representative of views from specific routes, they are all from roads, not from the many frequented Public Rights of Way, and do not reflect the worst case position. The lpa has identified a 6 VPs, A to F (LPA 4 Figures PVR 8 to M), which together with the ES VPs, show the real extent and degree of effects. Assessment from these viewpoints VPs reveal that, in all cases, the 9 turbines would have a noticeable cumulative impact with the offshore wind farms, with Orby Marsh in foreground and the offshore turbines as a backdrop, diminishing the relationship of Wolds, Marsh and Coast, and apparently significantly narrowing that gap.
- 6.20 The offshore wind farms already create a confusing visual effect on views out across the marshes from within the AONB. Orby Marsh would further compound the considerable impact of the existing 129 turbines and proposed 180m high offshore turbines, appearing at about the same height in views from the AONB. The onshore turbines would add to the visual confusion, through confusing the eye on distance and totally detracting from the otherwise simple relationship of AONB, flat marsh, coast and sea. Orby Marsh would blur the visual distinction; diminish the character and appearance of the eastern AONB and the value to its special character of the marsh and coast and sea.
- 6.21 At the southern tip of the AONB, Croft is in view from several locations within the AONB, often in the middle distance, seen over trees or in breaks in the foreground vegetation. In these views Orby Marsh would also be visible as would the offshore wind farms. These viewpoints would reveal that the southern extremity of the AONB was apparently surrounded by wind farm development and wind turbines would become part of its landscape character, significantly diminishing its special qualities.
- 6.22 The cumulative impact on these static AONB views of Orby Marsh with Bangers is experienced at long distance only. There is a slight cumulative effect but it is not significant. Views of the single turbine at the Lincolnshire Poacher factory are more confined and are seen in the same views with Orby Marsh from the AONB in long distance only.
- 6.23 Long distance views from the "inner" Wolds would also be affected. On a clear day, from occasional viewpoints, the horizon line to the east is lined with moving turbines, catching the light, diminishing the sense of distance and detracting from the unspoilt character and tranquillity. In line the existing wind farms appear with Bangers to the north, then the small-scale but closer Lincolnshire Poacher, then the dense offshore wind farms, with Croft the most eye-catching and distinct. Orby Marsh would add to this being visible in front of the offshore wind farms further adding to the line.

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<sup>16</sup> CD A3 Volume 3 Viewpoints

6.24 Sequential effects would be experienced by travellers using the A1028 and A158, travelling south and east respectively. There are already glimpsed views of one wind farm after another when travelling stretches of these routes in the eastern Wolds and Orby Marsh would be a further intrusion. Whilst travellers are not the highest sensitivity receptors, the effect on them would still lead to the perception of a diminishment of the quality of the AONB. There are several Public Rights of Way which combine to produce routes and circuits. The Three Towns Walks has 3 routes through part of the AONB (LPA 2 Appendix A). These walks would experience sequential effects from many of the wind farms including Orby Marsh.

6.25 Overall, the adverse impact on the character and qualities of the south-eastern tip of the AONB would be significant. Whilst it is not the case that one single view or route would be dramatically impacted upon, it is the accumulation of the many lesser effects which result in Orby Marsh having a corrosive impact that would compound the visual effects of the existing and consented on and off-shore wind farms.

*Cumulative Impact Assessment on the Marshes (LPA 2 pages 35 to 38; Lpa 4 VPs G to L; CD A2 Volume 3 VPs 1, 3, 4, 7, 20, 22 & 23)*

6.26 There is an important and distinctive relationship between the AONB, Marsh and Coast. Because of its status and higher sensitivity, the gap that the marsh provides is a crucial buffer for the AONB against the developed coastline. In addition to wind farms in the landscape/seascape, there are other man-made structures, the roller coaster at Ingoldmells and the Butlins' Skyline Pavilion, on the coast that are of such size that they have a visual effect as well. These structures effectively shrink the gap between the coast and the AONB and limit the capacity of the landscape to accept further significant man-made structures. This is consistent with the conclusions of the Inspector in the 2004 appeal who whilst assessing a larger scheme was doing so in the context of a landscape with many fewer wind farms (CD H19).

6.27 The visual impact assessment demonstrates that the landscape around Orby Marsh is the breathing space between Bambers, Croft and the offshore wind farms. In this space the overlapping effects of these 3 are only slight and it is not possible to see all 3 from any ground level viewpoint. Orby Marsh would result in cumulative effects across a wide area of the marsh where there would be an overlap of substantial and moderate effect radii from all 3 plus Orby Marsh. This shows that from sequential locations and also static viewpoints there would always be a wind farm in view or about to be in view from Mablethorpe to Wainfleet. The whole of the marsh character would become a "Landscape with a Wind Farm Sub-Type".

*Cumulative Impact on the Coast (LPA 2 pages 38 & 39; LPA 4 VPs L & M)*

6.28 At the coast from Anderby to Gibraltar Point the offshore wind farms become visually dominant and an area of the seascape has the character of being a "wind farm seascape". Whilst the onshore wind farms are not coincidentally visible from the beaches, due to sand banks and dunes, they are visible from the immediate hinterland for viewers moving to and from the beaches. With Croft inland and Orby Marsh in the immediate hinterland to the coastal settlements, the presence of wind farms in trips moving to and from the

coast would be ever present; views of the landscape and seascape would be saturated by their presence.

#### Planning Policy and Planning Balance

- 6.29 The relevant policies are largely agreed between the parties. The disagreement is where the balance lies in this case and arises principally out of the differing landscape and visual impact conclusions rather than any material debate as to how the planning balance is to be struck.
- 6.30 Despite changes in planning policy since the lpa refused the application a planning balance remains to be struck, which is not materially different from that which was required before the Framework replaced Planning Policy Statements or since PPG was published in March 2014. The appellant acknowledges that the provision of renewable energy does not constitute a green trump card.
- 6.31 The lpa acknowledges that the scheme would contribute towards the Government's targets for the production of renewable energy and a reduction in greenhouse gases and that these factors weigh in favour of the scheme. However, the evidence shows that this scheme would have a significant adverse effect on the distinctive landscape of the Outmarsh and views to and from the AONB. These are all features offered policy protection by LP Policies C11, A4 and A5 and Framework paragraph 109. In this context, the benefits of the renewable energy generated do not outweigh the significant harm to the character and appearance of the area and the harm to views to and from the AONB across the marsh.

#### Other Matters

- 6.32 The lpa considers that the appellant's statement of support is flawed and should attract no weight (Doc 78). Given that the application was made in 2010 and followed much earlier proposals, the statement appears to be no more than a last gasp effort to suggest local support rather than a "*firm commitment to gauge local opinion*". Paragraph 2.1 suggests that the survey was looking to obtain support as an aim of the survey rather than being a neutral exercise.

#### Conclusion

- 6.33 The Orby Marsh turbines would cumulatively with other constructed and proposed wind farms have a significantly harmful impact on the character and quality of the AONB and the landscape of the marshes and coast. This harm cannot be justified by the renewable energy benefits of the scheme.

## **7. The Case for Lincolnshire County Council**

The material points are:-

- 7.1 LCC supports the lpa's decision to refuse planning permission and commends to the SoS evidence submitted by the lpa. LCC's evidence is intended to show that this scheme would impact not only on the district of East Lindsey but also the County as a whole. Although not party to the SoCG, LCC does not take issue with its contents.
- 7.2 The Lincolnshire landscape with its subtle changes in form and character is cherished and the AONB is one of only 40 such areas in England and Wales. LCC has economic development at the heart of its priorities. Many parts of the county experience relatively low levels of pay and it is important that local economies are supported and encouraged to grow in a sustainable way. Tourism plays an important part in the local economy and tourism is related to the character and attractiveness of the landscape and coast.
- 7.3 Although wind farms bring renewable energy benefits they have a significant landscape and visual impact. LCC supports the lpa's position on the specific impact the turbines would have on the landscape of the AONB and Orby, which is itself of value in the transition from the coast to the AONB, and on the impact on the nearby coast. The adverse landscape and visual impact would have an adverse knock-on effect on tourism and future investment.
- 7.4 LCC's landscape and visual assessment is based on the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013 (GLVIA 2013) (CD G14). Whilst the ES assessment was prepared based on the Second Edition of the GLVIA 2002 (CD G1), the Landscape Institute has confirmed that it is acceptable for assessments undertaken prior to the publication of the GLVIA 2013 to be consistent with the 2nd edition of the GLVIA. Whilst the PMs have been produced in accordance with the 2007 SNH Guidance, there is increasing recognition that PMs under-represent of the scale of the turbines in the landscape.
- 7.5 Landscape effects are effects on the fabric and character of the landscape. Wind turbines are unusual in that their effects on landscape character are predominantly as a consequence of their impact on the appearance of the landscape, how they change the pattern of the landscape and its perceptual qualities, rather than as a consequence of changes to the fabric of the landscape. Visual impacts are effects on people and are concerned with the amenity of those people who will experience the changes in views.
- 7.6 The 3rd edition GLVIA sets out the factors to be included in a landscape and visual impact assessment (CD G14 page 32 paragraphs 3.15-3.17). These include an understanding of the landscape, its constituent elements, its character and the way this varies spatially, its geographic extent, its history, its condition, the way the landscape is experienced and the value attached to it. Establishing the key characteristics of the local landscape character is particularly important in wind turbine schemes. This is followed by an assessment to establish the sensitivity of the landscape to the type of development proposed. Landscape sensitivity is derived from combining judgements about its susceptibility to change arising from the specific

proposals with judgements about the value attached to the receptors. The value of a landscape is the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a variety of reasons. This includes a review of existing landscape designations, but the value attached to undesignated landscapes also needs to be carefully considered.

- 7.7 The susceptibility to change of a landscape is the ability of the landscape receptor, whether it be the overall character or quality/condition of a particular landscape type or areas, or an individual element and/or feature, or a particular aesthetic and perceptual aspect, to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies. The 3<sup>rd</sup> Edition GLVIA identifies that the assessment of susceptibility must be tailored to individual projects and should not be recorded as part of the landscape baseline but should be considered as part of the assessment of effects. In this case, LCC's assessment of sensitivity is considered alongside the assessment of landscape effects.
- 7.8 It was common practice for LVIA's undertaken in accordance with the 2nd Edition GLVIA to record sensitivity as part of the baseline. Where undertaken properly this was an assessment of the sensitivity of the landscape to the specific form of development proposed, which equates to the susceptibility to change as recommended by 3<sup>rd</sup> Edition GLVIA and not inherent sensitivity. There is a growing consensus with those aspects that increase a landscape's sensitivity to wind turbine development, which equates to the susceptibility to change as recommended by 3<sup>rd</sup> Edition GLVIA and those that decrease it.
- 7.9 The following attributes are generally considered to be indicators of susceptibility to wind turbine development:
- **Scale and Enclosure:** Large scale open landscapes are likely to be less susceptible to wind turbine development than small scale intimate landscapes with a strong sense of enclosure. Turbines are more likely to appear out of scale and dominate landscapes with smaller and/or irregular field sizes and landscapes with frequent human scale features.
  - **Landform and Topography:** A smooth, convex or flat landform is likely to be less susceptible to wind turbine development than a landscape with a dramatic rugged landform, distinct landform features or pronounced undulations because turbines are less likely to detract from visually important landforms, appear confusing or unsettling (due to turbines being at varying heights or on the crest of valleys).
  - **Land Cover Pattern:** Simple, regular landscapes with extensive areas of uniform ground cover are likely to be less susceptible to wind energy development than landscapes with more complex or irregular land cover.
  - **Settlement Pattern and Density:** More sparsely settled areas are likely to be less susceptible than more densely settled areas or areas with a high proportion of historic villages as there will be opportunities to site turbines so that they do not dominate distinctive settlements.

- **Landmarks and Visible Built Structures:** Landscapes that contain large scale infrastructure, major communications routes and large-scale developments are less susceptible to wind turbine development although development needs to be carefully sited to avoid visual clutter or cumulative impacts. Historic landmarks such as important views to distinctive church spires and towers increase susceptibility, especially where they occur frequently.
- **Skyline:** Prominent and distinctive skylines, or skylines with important landmark features that are identified in the landscape character assessment, are likely to be more susceptible to wind turbine development because turbines may detract from these skylines as features in the landscape, or draw attention away from existing landform or landmark features on skylines
- **Visual Connections with Adjacent Landscapes:** Where the landscape character assessment has identified that views to and from adjacent landscapes are important the susceptibility to wind turbine development may be increased as landscape impacts may extend to adjacent landscape character areas
- **Remoteness and Tranquillity:** Relatively remote or tranquil landscapes, due to freedom from human activity and disturbance and having a perceived naturalness or a strong feel of traditional rurality, tend to be more sensitive to wind turbine development because wind turbine development will introduce new and uncharacteristic features which may detract from the sense of tranquillity and or remoteness/ naturalness. Landscapes that contain many signs of modern development are generally less sensitive. Remoteness and tranquilly are generally aspects likely to increase the value that is placed on a landscape.

7.10 On Landform and Topography, PPG in relation to turbines states that "*the impact can be as great in predominately flat landscapes as in hilly or mountainous areas*". This is an indication that the consensus on the susceptibility of flat landscapes is changing most likely as a result of the increasing number of wind turbine developments in flat landscapes. One of the reasons that flat landscapes were considered capable of accommodating wind turbine development is because they are often associated with large scale open landscapes. In a large scale landscape everything is dwarfed, trees, houses, large farm buildings and wind turbines are diminished by the size of the sky. However flatter landscapes also increase the potential visibility of the turbines and this has the potential to give rise to greater cumulative impacts. Whereas one scheme can appear dwarfed by the scale of the landscape if the number of schemes with extensive visibility increases the landscape is no longer capable of dwarfing them and they have the potential to become all pervasive in a flat landscape. LCC's assessment of the landscape effects of the development considers both the susceptibility of the landscape to wind turbine development using the criteria identified above and its value. These are considered alongside the assessment of effects.



## Cumulative Impacts

- 7.11 Paragraphs 8.1 and 8.23 of the SoCG sets out agreed guidance on assessing cumulative impacts. In addition to these Chapter 7 of the 3<sup>rd</sup> Edition GLVIA (CD G14) provides guidance on the assessment of cumulative impacts. The various guidance documents, which are complementary, set out what should be considered in terms of other developments and on the range of effects that should be assessed. Effects will include the additional effects of the main project under consideration and the combined effect of all past and present development including those with planning consent. Cumulative impacts arise when the impact of a particular development is greater because of the presence of other development, either existing or consented. It is sometimes the case that a particular development might not have a significant impact in its own right but when considered in conjunction with other developments the impact becomes significant.
- 7.12 With regard to when landscape cumulative effects should be considered significant the 3<sup>rd</sup> Edition GLVIA says the following: *"The most significant cumulative landscape effects are likely to be those that would give rise to changes in the landscape character of the study area of such an extent as to have major effect on its key characteristics and even in some cases to transform it into a different landscape type. This may be the case where the project being considered itself tips the balance through its additional effects. The emphasis must always remain on the main project being assessed and how or whether it adds to or combines with the others being considered to create a significant cumulative effect."*
- 7.13 The SoS in the Treading Wind Farm decisions noted that whilst he agreed with the inspector's decision that the degree of harm was acceptable, he was *"sympathetic to the local concern that this cluster of turbines would become an unacceptable defining characteristic of the local landscape and that this adverse impact should be given weight."* (CD H64 paragraph 19). In the Nun Wood case the Inspector observed, *"The new practice guidance records that cumulative effects may arise where two or more of the same type of renewable energy developments are visible from the same point, or are visible shortly after each other along the same journey. There would have been no purpose in specifically identifying the importance of cumulative effects other than to act as a regulator on the number and distribution of schemes in a given area. Furthermore, it is difficult to contemplate circumstances where a cumulative effect could be other than an adverse effect."* (CD H70 paragraph 263). In that case, the SoS agreed with the Inspector's conclusions on cumulative effects.
- 7.14 In considering cumulative impacts LCC's assessment has included a consideration of whether the current scheme, in addition to or in combination with existing developments, would: become a defining characteristic of the local landscape; give rise to major changes to the landscape character; and/or create a new landscape character type.

## Existing Landscape Character and Context

- 7.15 The site is located within NCA 42 - Lincolnshire Coast and Marshes and the local LCA is Coastal Outmarsh LCA (LCC Figure 2). The site is close to the

- boundary with NCA 43 - Lincolnshire Wolds and close to the boundary with the local Middlemarsh LCA (LCC 2 Appendices 1 & 2).
- 7.16 Unlike other forms of development, turbines affect how the landscape is perceived and experienced for some distance around the site. It is therefore important to understand the overall landscape context as well as the specific local landscape characteristics. It is clear from both the NCAs and the LCAs that landscape character in this area tends to be linear and roughly parallel to the coast. The higher ground of the Wolds, most of which is AONB, runs north/south almost parallel to the coast. To the east is the gently undulating Middlemarsh and beyond to the coast is the much flatter Outmarsh. This transition is very clear when approaching the coast from the west.
- 7.17 The Wolds rise very markedly out of the low lying landscape with the steep scarp slope facing to the west. To the east the descent to the low lying Outmarsh is more gradual both in terms of topography and vegetation cover. Near the site, east of Welton Le Marsh and to the south east of Gunby Hall, the Middlemarsh is noticeably more vegetated than the Outmarsh, with tree lines along field boundaries and small blocks of woodland. LCC 2 Figure 1 illustrates the much greater complexity and irregularity of the roads within the Middlemarsh as compared to the Outmarsh.
- 7.18 The Outmarsh occupies only a relatively narrow strip of land that lies between the Wolds, with its undulating edge, and the coast. Near the site, and for a significant portion of NCA 42, this is a developed coastline. The Outmarsh extends north for some distance behind the coastal edge but, as a rural landscape, it is relatively narrow east to west for much of the NCA. This is particularly so in the vicinity of the site as the Skegness, Ingoldmells, Chapel St Leonards and associated tourist developments are all located within the Outmarsh, thereby narrowing the area of rural Outmarsh.
- 7.19 The appeal site is typical of the Coastal Outmarsh LCA. However, it is also very close to the Middlemarsh LCA. ES VP 14 is located on the edge of the AONB (CD A2 Volume 3). Here, an arable field is located in the immediate foreground but beyond that the more wooded qualities of the Middlemarsh LCA are evident. The turbines would be located in the landscape just beyond this LCA. The undulating form of the landscape, although not evident in the photograph, is very evident when on the ground.
- 7.20 The ES photographs do not show the offshore wind turbines and the ES VP 14 Wireframe suggests that the offshore turbines form very small features on the horizon. However, in reality these turbines have become a defining feature in this view. These turbines stretch along the horizon for some considerable length and their movement draws the eye. The offshore turbines are associated with coastal development although other development on the coast appears relatively insignificant from this viewpoint. From VP 14, the Outmarsh is not readily evident in the view. From here, the Middlemarsh dominates the foreground and the developed coast and offshore turbines dominate the horizon.

## Landscape Value

- 7.21 The site is not covered by any national or local landscape designations but it is located between 2 areas that are popular tourist destinations; the coastal resorts at Skegness, Ingoldmells and Chapel St Leonards to the east and the AONB to the west. The AONB designation recognised the area's unique landscape and distinctive sense of place. The AONB Management Plan identifies "*expansive, sweeping views*" as one of its special qualities. Views from the scarp edge are noted as being particularly dramatic, expansive, sweeping views are considered to be a general component of importance to the natural beauty and they are considered to be present within most of the AONB (LPA 7 Appendix 3, page 22 Table I).
- 7.22 Almost two-thirds of NCA 43 is within the AONB, with views to the east "*of the Lincolnshire coast and marshes and the North Sea*" providing a strong visual link with the adjacent landscape. In the section relating to landscape change, the NCA states that: "*Beyond the area itself wind farms that have been constructed in the last 10-15 years and which are currently operational can be seen from this NCA and visually impact on the landscape character. The visual impact of expanding renewable energy developments is one of the biggest pressures on this NCA because of the impacts on the long, rural, undisturbed views which are characteristic to the area.*"

## Landscape Effects

- 7.23 The 3<sup>rd</sup> Edition GLVIA defines sensitivity as combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor. Whilst there is no criticism of the use by the ES of the definition of sensitivity in the 2<sup>nd</sup> edition GLVIA, LCC considers it appropriate to use the latest approach. The key change in the 3<sup>rd</sup> Edition GLVIA is to emphasise that the assessment of susceptibility should be specific to the type of development proposed and not just generic.
- 7.24 The ES assessment of landscape sensitivity appears to relate to an assessment of the landscape condition and the overall intactness of the landscape rather than a consideration of whether the particular attributes of the landscape were susceptible to wind turbine development paragraph (CD A2 Volume 2 paragraph 6.4.5.6).
- 7.25 The East Lindsey Landscape Character Assessment makes an assessment of inherent landscape sensitivity. The Coastal Outmarsh LCA is considered to have a high to moderate sensitivity but lower in areas influenced by localised industrial and urban areas. The particular sensitivity appears to be as result of the mostly "*very intact and distinctive rural landscape.*" (CD F5 page 89). It is noted that "*man-made influences detract from the landscape*". These are noted as wind turbines at Conisholme, oil storage tanks at Tetney and the Theddlethorpe gas terminal as well as the urban area around Skegness, Ingoldmells, Sutton on Sea and Mablethorpe. Man-made influences visible from the LCA are the offshore turbines at Skegness. The Middlemarsh LCA is also identified as having high to moderate sensitivity. It is described as "*a very distinctive and very intact rural landscape with very few detracting features.*" (CD F5 page 82).

## Landscape Susceptibility

- 7.26 The analysis of the landscape susceptibility to this particular development considers the attributes identified at paragraph 7.9:
- **Scale and enclosure:** Although the appeal site is large scale and open this characteristic is not uniformly shared by the surrounding landscape. To the west the Middlemarsh LCA is smaller in scale with a moderate degree of enclosure. To the east the large scale open landscape very quickly becomes the developed coastal strip.
  - **Landform and Topography:** The site is located on level, low lying land but to the west the land is more undulating rising to the upland area of the AONB. Whilst nationally the Wolds may not be considered to be distinctive uplands, relative to the surrounding Lincolnshire landscape they are topographically very distinctive.
  - **Land Cover Pattern:** The land cover pattern within the site is consistent but as noted above this is not part of a very extensive uniform area.
  - **Settlement Pattern and Density:** The site and the immediately landscape is sparsely settled although the coastal strip is more densely populated, particularly during the summer months.
  - **Prominent Built Structures and Landmarks:** The most prominent built structures in the landscape are the offshore turbines along the coast. There are a number of large scale recreational facilities, in particular the rides associated with Fantasy Island and Butlins but in general these are located along the coast. Skegness Stadium located close to the southern boundary of the site is an exception. The Inspector in the 2004 appeal noted that Skegness Stadium and the nearby grain store *"although not excessively tall, are prominent features in the locality. They are somewhat at odds with the smaller scale of other rural buildings and uses. In my view they weaken the appearance and characteristics of this area of marshes between the coast and the Wolds, which is in any event relatively narrow at this point."* (CD H18 paragraph 20). At that time, there were no offshore turbines and the landscape situation with regard to prominent built structures was very different.
- 7.27 Since the 2004 decision the contrast between the coastal strip and the marshes that separate the coast from the AONB has intensified with the erection of the offshore turbines. From the landscape to the west the offshore turbines are perceived as part of the developed coast. It is only when on the coast that the turbines are clearly perceived as offshore. This is due in part to the fact that the sea is not easily visible from a distance on account of the sea defences. It is also due to the proximity of the turbines to the coast, just beyond 5km. The absence of anything between the coast and the turbines accentuates the sense of a lack of separation. Croft consists of only 2 turbines and is located at the southern tip of the offshore arrays beyond the southern tip of the AONB. The oil storage tanks at Tetney and the Theddlethorpe gas terminal are located at some distance from the site.

- 7.28 Skyline: The site, due to its low lying nature, does not form a significant skyline. However its low lying nature allows views across, particular views from the west and the Wolds, to the coast and from the coast back to the Wolds. The landform of the Wolds forms a very distinctive skyline in this generally low lying landscape. The offshore turbines have created a very noticeable skyline when viewed from the west.
- 7.29 Views and Visual Connections with Adjacent Landscapes: there are very strong visual links between the Coastal Outmarsh, the Middlemarsh and the AONB.
- 7.30 Remoteness and Tranquillity: Although this is not a wild landscape or one remote from public access there is a relative sense of tranquillity in contrast to the busy developed coastal strip. The Middlemarsh LCA is described as "*A distinctive and tranquil rural landscape with very few minor detractors.*" (CD F5 page 77).
- 7.31 The site has a moderate to high susceptibility to turbine development of the scale proposed, principally on account of the potential for cumulative impacts due to the significant presence of the existing offshore turbines in the landscape and their intensification of the developed coastal strip. The intensification of man-made structures along the coast throws into relief the generally rural and intact landscape of the Middlemarsh and Outmarsh and increased its importance with regard to providing a sense of separation between the AONB and the developed coast.

#### Landscape Effects

- 7.32 LCC has a role in managing and protecting the AONB and although the site is located outside of it, there are specific views of it from the site. The turbines would impact negatively on views both into and out of the AONB. In the wider context, the implications of wind farm developments off and onshore visually dominating the open coast, and neighbouring grazing marshes, which are an integral part of the area's landscape were issues at the Langham/Anderby Inquiry (CD H17). There, the development was located about 4km from the Coastal Conservation Area and would be visible from it, particularly the section between Ingoldmells and Chapel St Leonards. Residents in Chapel St Leonards and Ingoldmells would, in addition to views of offshore turbines to the east, have views of onshore turbines to the west. LCC believe that the Orby turbines would have a detrimental impact on the open coast (LCC 2 Figure 1).
- 7.33 The site is located almost in the centre of the land that lies between the AONB and the closest offshore turbines. When the site was first considered in 2002, the offshore developments were not in the planning system and would not have been a factor that would have influenced the choice of a site. The first offshore arrays become operational in 2008. It is accepted that all commercial scale development will have adverse landscape and visual impacts and that there is only one key form of mitigation i.e. locating developments in the right place. The presence of the offshore developments has had a significant impact on the potential for wind turbine development on this site to result in significant adverse impacts.

- 7.34 Even without the offshore turbines the Inspector in 2004 recognised that the current character of the landscape is derived from the relationship between the coast and the AONB. That Inspector considered that the 20 turbine scheme would narrow the marshes area between the coast and the AONB because the vertical form of the turbines, their metal construction and their characteristic movement would mean that they *"...would be perceived as similar to these coastal features and, together with the grain store and stadium on Marsh Lane, be seen as a consolidation of substantial man-made structures."* (CD H18 paragraph 27).
- 7.35 Although the current scheme is smaller and the height of the turbines has been reduced the increased intensification of development of the offshore turbines, means that the narrowing effect on the marshes area between the coast and the AONB would be increased (LCC Figure 4). Despite the offshore turbines having a considerable landscape presence around the site, they are still perceived as being located beyond the coastal edge. The landscape between the AONB and the coastal arrays is perceived as being largely free of turbine development; Croft being the only large scale exception. The introduction of 9 turbines into the middle of the landscape between the AONB and the offshore arrays would significantly alter this balance.
- 7.36 The balance of the landscape would be altered both when viewing the offshore turbines beyond the Orby turbines and when viewed in a different direction. From viewpoints within the AONB, the offshore turbines have significantly changed the nature of the horizon, whilst the landscape between the VPs and the horizon remains rural and intact (CD A2 Volume 2 VPs 14 & 16, LPA 4 VPs D & E). From LPA 4 VP F, the immediate foreground is the undulating foothills of the AONB including an attractive, partially wooded valley. The turbines would appear beyond and above the wooded foreground to the left of the valley in front of the offshore turbines. Whilst both sets of turbines would appear at a similar height on the horizon, the Orby turbines would be clearly located in a separate landscape and would be closer. It would appear as if the offshore turbines were encroaching into the Outmarsh.
- 7.37 From ES VP 14 the Orby turbines would be seen in front of the offshore turbines, they would be both higher on the horizon and clearly much larger. The Orby turbines would be seen rising from behind a belt of trees. Currently, turbines are clearly restricted to the coastal zone and associated with coastal developments. The new turbines would very clearly sit in the landscape between the AONB and the coast.
- 7.38 From ES VP 15 the Orby turbines would also be seen in front of the offshore turbines and would appear to be much larger than the offshore turbines. The offshore turbines although closer than from viewpoints within the AONB, are less dominating than in the latter views due to elevation of the Wolds viewpoints. Although not dominant in the landscape the offshore turbines have become a key characteristic of outwards views defining the horizon; currently everything in between remains rural. The Orby turbines it would make it appear as if all the landscape, from this viewpoint to the coast, was defined by turbine development.

- 7.39 There are a number of viewpoints located to the west of the coastal strip that are representative views for the edge of the seaside resorts (CD A2 Volume 3 VPs 20, 21, 22 & 23). The development along the coast is significant from all these locations although not generally visible in the same view as the Orby turbines. The offshore turbines are intermittently visible beyond the coastal development. Currently everything to the east is man-made; caravan parks funfairs, turbines. The landscape to the west is not pristine as it contains some masts, telephone wires and low voltage electricity lines. However it remains largely undeveloped countryside and provides a distinctively different hinterland to the coast. The introduction of the Orby turbines into this landscape would alter the balance and the landscape around the site would become associated more with the developed coast than the rural hinterland.
- 7.40 The extension of the developed coast would have a particularly marked effect from the series of small irregular roads that run from the A158 across the Outmarsh roughly parallel with the A52. ES VPs 3 and 4 are located on these roads and LPA 4 VP G is located close by. The offshore turbines already have a significant impact on the character of the landscape in this area. The Orby turbines would be seen in the opposite direction i.e. in front to views to the AONB. The turbines would entirely overpower the views of the Wolds rising out of the level landscape and the landscape would be perceived as being sandwiched between turbine developments.
- 7.41 The extensive development of offshore wind turbines has increased the sensitivity of the appeal site to wind turbine development. It has intensified the sense of a developed coastline and narrowed the perception of distance between the AONB and development on the coast. This has increased the importance of the role of the Middlemarsh and Outmarsh in this area in providing separation between the AONB and the coastal development. The Orby turbines would effectively be situated in the centre of this area. The presence of wind turbine development would become all pervasive and the current distinction between the developed coast and the rural hinterland would be diminished. The current scheme could not be located in this landscape without the wind turbines becoming a defining characteristic of the local landscape and thereby giving rise to major changes to the existing landscape character.

#### Impacts on Visual Amenity

- 7.42 The landscape impact of turbine development is as a result of visual changes that bring about changes to the perceived character of the landscape. Visual impacts are an assessment of the impact on people who experience these changes in views. The area in the vicinity of the site is located between areas that are much visited by tourists, the seaside resorts and the Wolds. Consequently there would be significant numbers of people travelling through the area whose attention is likely to be focused, at least in part on the landscape. LCC agrees with the lpa's assessment of visual impact.

#### Comment on the Appellant's Landscape and Visual Impact Evidence

- 7.43 The appellant's landscape and visual analysis begins with a central misunderstanding of the local landscape and character type, and ends with a

conclusion which has little or no relation to what would happen on the ground. Notwithstanding this fundamentally flawed position, the appellant still accepts that this development have, *"A significant effect with respect to local landscape character would arise. This would be direct, long-term and limited to the Coastal Outmarsh..."* (APP 2, page 10, paragraph 5.20).

- 7.44 There is no policy support, or even logical basis, for the assertions made by the appellant that, *"wind farm development is a key characteristic of this landscape type and additional wind farm development, in principle, must therefore be consistent with this key characteristic."* (APP 1, page 2, paragraph 3.6).
- 7.45 The appellant tries to draw strength from the Key Characteristics of the Outmarsh (CD F5). The final bullet point says, *"A predominantly intact and distinctive rural landscape with some man-made influences including a gas terminal, an oil storage facility and several wind farms."* Notwithstanding the above, the appellant acknowledged that LCA J1 was not a good starting point to assess the existing landscape, but rather that it was "part of the process" and that an "oil storage facility or a gas terminal" could be characterised as a key characteristic. The appellant's assessment that wind farms are part of a "wider" interpretation of LCA J1 is fundamentally wrong. Rather wind farms are man-made detractors from the key characteristics of the local landscape. Any fair reading of these of the LCA characteristics would give more weight to and recognise this area as being a *"predominantly intact and distinctive rural landscape"*. These are the key characteristics to be valued, whilst man-made influences such as wind farms are simply detractors from it.
- 7.46 The appellant's assessment ignores the fact that the wind farms proposed would not only have a significant impact, but rather dominate the particular local landscape. Moreover, together with the extensive offshore developments, amount to an unacceptable impact cumulatively as per the lpa's reason for refusal. The appellant's model purporting to show *"probable theoretical"* and *"possible theoretical"* local landscape, is unhelpful. This is not a model recognised by any official body and does not stand scrutiny. Its key flaw is the way in which it determines the landscape purely in distance terms, and does not assist in explaining precisely why this matters. The plain fact being that the impact is clear and there to be seen. There is a role played by this landscape in that it separates the AONB from the developed coast. It matters even more now because the developed coast also competes with the offshore turbines.
- 7.47 It is trite to point out that the development proposed at Orby Marsh is not just generic development but development of more turbines. The appellant states *"No significant landscape effects would arise individually or cumulatively with respect to designated landscapes whether locally or statutorily and this includes taking the special qualities of the AONB set out in the Lincolnshire AONB Management Plan 2013 – 2018 into account."* (APP1 paragraph 3.10). However, once the key characteristics of NCA 42; Lincolnshire Wolds and the relevant parts of the East Lindsey Landscape Character Assessments aided by observations on the ground are considered it is abundantly clear that such a conclusion does not stand up to scrutiny.



## Tourism

- 7.48 LCC considers the potential negative impact upon the tourism industry to be a key material issue. East Lindsey had the largest total revenue from tourism in Lincolnshire in 2012 with just under £496m, a drop 1% from the previous year. This substantial sum shows the importance of tourism to the District and the County in terms of income and jobs (LCC 4A). Some 17.4 million visitors came to Lincolnshire in 2012, up from 17 million the previous year. Some 17,796 jobs (full time equivalent) depend upon the tourism accommodation sector. Skegness was the 4th most visited city/town in England in terms of holiday trips, with 982,000, and the 13th most visited in terms of total trips with over 1 million. In 2012, £199m was spent in Skegness, as detailed by Visit England in their report on the Top 20 Most visited English Cities and Towns in 2010 by UK residents (LCC 4C).
- 7.49 There are few studies or any real data in England which supports the case of a direct correlation between this type of development and the impact on tourism in the area. However, recent research at Bournemouth, into the impact of the proposed Navitus Bay (NB) offshore wind farm on tourism is of significance. There, the developer commissioned research that suggests that 14% of visitors would not return to the area if the wind farm was constructed (LCC 4D & E).
- 7.50 LCC produced a draft statement, *The Vision for Tourism in Lincolnshire* setting out its vision for tourism in the County. This says that, *"By 2020, tourism will be recognised as having made a real and positive change to Lincolnshire's economy. It will be seen to have delivered growth, safeguarded and created jobs, driven investment and had a positive impact on the quality of life for Lincolnshire residents... Together, we will aim to double the real value of tourism to our economy by 2020"*. This is a powerful statement of intent and underlines LCC's intention to deliver growth through tourism.
- 7.51 LCC accepts that no 2 sites or development proposals are identical, and that each proposal must be judged on its own merits. However, the NB research indicates a direct and significant loss of visitors. If East Lindsey lost 14% of its visitors this would equate to a loss of income of £69.44m and a £27.86m loss for Skegness alone. These losses suggest a potentially serious blow to the tourist industry with associated loss of business and employment.
- 7.52 LCC accepts that the issue of tourism will be unlikely to be determinative as a standalone issue in this appeal. Nevertheless, if the SoS finds that the cumulative impact of the proposal would be harmful, then it is likely, that the it would significantly harm the attractiveness of the AONB and would make them less welcoming to walkers and riders and likely reduce the public's use of this national asset. The proposal is in direct conflict with LP Policy CL11. What attracts visitors to the AONB is the natural environment and the introduction of this wind farm would reduce the inherent attractiveness of that environment, and visitors' experience of it. The proposals would also, cause harm to the attractiveness of Skegness and surrounds as a tourist/recreation destination. LCC considers that the harm to these interests of importance would be serious, and that the harm outweighs the benefits

that would accrue from the scheme. Conditions could not overcome this substantial harm which would persist for the lifetime of the development.

Comment on the Statement of Support submitted by the Appellant

- 7.53 LCC takes issue with the late submission of a survey purporting to indicate support from the community for the development. There was no prior indication from the appellant that this statement/survey was going to be compiled, or indeed whether it would involve members of the public who have attended the inquiry. It is unclear whether any of these people have sought permission to take part in the inquiry. However it is nonetheless clear that their untested evidence is no more than anecdotal responses.
- 7.54 The questions asked in the survey have been devised and possibly asked in such a way that is clearly skewed towards a favourable answer and LCC has serious concerns regarding its methodology (Doc 78 Appendix B). It is unclear what appropriate information, if any, was given to the participants and to what extent these responses contain informed answers. In principle, this is simply inappropriate and is, in effect *ex post facto*, a clear indication of how desperate the appellant is to win approval.
- 7.55 Notwithstanding the above, for the appellant to secure a "60%" approval rate in these circumstances, questions the real level of support they claim to have. In stark contrast, OWAG, and those living closest to the site, have participated throughout the process. This new material is inappropriate and unhelpful. The SoS is invited to attach limited, if any, weight to this survey.

## **8. The Case For Mrs Smith**

The material points are:-

8.1 This is the third application for a wind farm at Orby Marsh but the first where the potential for noise disturbance has been examined in depth. This scrutiny has highlighted basic errors in the ES noise assessment, which have been overlooked for a decade. The lack of scrutiny has resulted in the appellant being happy to rely on out-of-date and incorrect data.

8.2 Further to my noise concerns almost every parameter available to the appellant has been changed, sometimes more than once, either to correct errors or in an attempt to increase the headroom under ETSU limits when clear breaches would occur.

8.3 The parameters changed over the last 2 years are;

- the turbine model has been changed twice;
- the ground effect factor condition started as  $G=0$  and changed to  $G=0.5$ , thus decreasing the theoretical turbine noise and increasing the apparent headroom;
- the application started with no site specific wind shear, but now uses wind shear data older than the background noise level (BNL) data;
- BNL graphs, after 5 attempts, are now only just correct;
- the appellant has changed acoustician;
- effectively a new noise ES was produced in January 2014, and again in September 2014;
- the coordinate locations for calculating predicted turbine noise levels have changed;
- the proxy locations used for several properties has changed;
- the issue of cumulative impact has at last been considered.

In the appellant's latest proof, BNL data has been added and removed from scatter graphs with no explanation, whilst other data, which has always been classed as excluded data, is relied upon (APP 14 & 15). The appellant's erroneous reliance on research data has been exposed, and numerous errors by the appellant's previous acoustician casts clear doubt over the reliability of the background noise survey and subsequent derivation work. Moreover, it is incomprehensible that a professional acoustician failed to see the 129 offshore turbines and his subsequent analysis, which claims limited cumulative impact, is shown to be flawed. Thus, if cumulative impact is accurately considered, less headroom would exist and breaches of the ETSU limits would occur more often.

## Concessions

- 8.4 The appellant made concessions on several issues highlighted, and whilst the inquiry may have got closer to having accurate and representative data on which to base its conclusions, there are still a number of errors.
- 8.5 On flat lining, the appellant's previous acoustician initially did not flat line the BNL regression analysis charts (CD A2 - ES APP 7-4). When challenged he flat lined incorrectly and then he did not flat line at all again. Subsequently, the appellant's current acoustician did not flat line correctly and it is only in his final submission that IoA GPG guidance has been followed (CD J6).
- 8.6 On road traffic noise (RTN) contamination, no data from the ES was excluded at the roadside locations, despite there being obvious contamination due to atypically high traffic flows when the survey took place. Subsequent evidence by the appellant's current acoustician conceded this, and contamination of up to 10dB at 2 roadside receptor locations was accepted.
- 8.7 On the existence of wind shear data, the ES states that no site specific wind shear had been collected (CD A2, Volume 2 paragraph 7.9.1.3). However, when the level of headroom under ETSU limits looked at risk, the appellant suddenly produced previously unseen 12-year old wind shear data.
- 8.8 On calculating the wind shear coefficient, the appellant's amenity wind shear calculations for the January proof of evidence incorrectly included Saturday and Sunday daytime periods (APP 12). The revised proof of evidence for September 2014 conceded this was the case, and the wind shear coefficients have been revised (APP 14). The ES use of an obsolete candidate turbine was highlighted in November 2012 and the appellant replaced it with a different candidate turbine (SM 3 Appendix 4 paragraph 1.4).
- 8.9 The appellant's previous acoustician had tried to use standardised wind speeds for calculating noise limits in the noise condition when the ES used measured wind speeds. This would allow greater headroom for turbine noise than measured wind speeds. Finally, the appellant accepted that if the ES did not use standardised wind speeds then measured wind speeds should be used.
- 8.10 It was pointed out in January 2014 that the coordinate locations for predicting turbine noise were incorrect. At Spring Cottage, the coordinates were the opposite side of the plot to the wind farm, and for Rose Cottage, the coordinate location was in the middle of the neighbour's garden (SM 2 page 25). For critical properties, the coordinates used were always further away from the wind farm which weighed in the appellant's favour. The appellant accepted the errors and the coordinates were amended.
- 8.11 On cumulative impact, until MAS visited the site in December 2013 it was not thought that the 129 offshore turbines might have an effect on BNLS. The appellant's own figures, which are inherently flawed and understated, indicate that some properties i.e. Sloothby, Field Farm, Dwellings TF1 and TF2, are affected by offshore wind farm noise (APP 15 page 27 Table A.14). Whilst this implies that the noise limits should be reduced, no reduction has been made in any of the suggested noise limit tables.

- 8.12 On RTN contamination at Spring Cottage, the appellant changed his position<sup>17</sup> conceding that road traffic noise would indeed be audible at that property, and that it would affect the BNL polynomial.
- 8.13 On the reliability of data, the appellant admitted that the entire noise survey had been incorrectly time stamped as Greenwich Mean Time (GMT) when it should have been British Summer Time (BST). This meant that all noise data figures were 1 hour out, resulting in incorrect data being used to derive BNL polynomials from which the noise condition levels are set. Whilst similar errors were found for traffic noise analysis, the appellant could not confirm this, rather suggested it was likely to be a labelling error.

#### Reliability of the Background Noise Assessment

- 8.14 The ES noise survey was conducted at an atypical time of the year, 23 July to 10 August 2002, with measuring equipment placed in locations that were not representative of amenity areas of dwellings surrounding the site. Thus BNLs are overstated and the derived noise limits in the noise condition are higher than is fair or correct.
- 8.15 The 12-year old background noise measurements, which are a critical starting block when calculating noise conditions, were not carried out fastidiously. There has been significant opportunity to repeat the survey up to the application in 2010 and apply guidance derived from recent appeal decisions e.g. Enifer Down (CD H39). The noise survey period and background noise level meters<sup>18</sup> were flawed and unable to collect accurate and representative background noise levels. The contaminated data was then analysed incorrectly and not in accordance with ETSU or IoA GPG guidance (CDs J2 & J6). These errors result in background noise polynomials and therefore noise condition limits that are higher than the levels that are typical in the amenity areas of the neighbouring dwellings for much of the year.
- 8.16 Paragraph 2.5.4 of the IoA GPG states that BNL measurement locations should be representative of a property's outside amenity area and be representative of facades with windows for the night time measurement periods (CD J6). At Spring Cottage, contrary to current GPG, the meter was positioned some 45 to 60m away on land owned by the appellant (SM 2 page 17 Figure 3). There is no explanation why this location was chosen and the occupier has indicated that he was not approached about placing the meter within his garden (Doc 28). Not only was the measurement location a long way away from the dwelling, it was afforded no shelter and placed in between 2 fields of mature corn, where millions of small corn heads would clatter together during any slight breeze. This location does not reasonably represent the amenity area of Spring Cottage or the amenity areas of the 6 other properties it is the proxy location for (IoA GPG (CD J6 paragraph 2.5.2)
- 8.17 The noise measurement location at Sloothby was in a field more 10m from an agricultural building (CD A2 Volume 4 page 151 Figure 2). This location is unrepresentative of the amenity areas of dwellings on Sloothby High Lane.

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<sup>17</sup> X-Examination of Dr. Bullmore.

<sup>18</sup> SM 2 paragraphs 2.8 to 2.20.

These dwellings have ideal and well-protected amenity areas that would have been more appropriate locations for measuring BNLs.

- 8.18 The measurement location at South Ings Lane was situated immediately adjacent to a hedge and a young tree and very close to a derestricted road, which is not mentioned in the ES or shown in the photograph (CD A2 Volume 4 page 151 Figure 4). South Ings Lanes is used as the proxy for 9 other dwellings (APP 15 page 45 Table C.4). Accordingly, greater care should have been taken in selecting a location that was more representative of all the other locations.
- 8.19 The measurement location at Wyche Farm is the only location that satisfies GPG (CD A2 Volume 4 page 151 Figure 3). The meter was situated in an area that fairly represented the amenity area of that property. It was not near any main roads atypically affected by seasonal traffic, it was afforded some shelter from facades which were over 3.5m away. Consequently, the levels here were the quietest BNLs recorded. Accordingly, the Wyche Farm BNLs are the only truly non-contaminated levels and should be used as a proxy for all properties in this noise survey and the source of base levels for deriving any noise condition. The appellant's acoustician disagrees and uses contaminated data, which increases limits.
- 8.20 GPG says that BNL meters should not be placed in locations where atypical background noise exists. Placing a BNL meter closer to a façade, but still 3.5m away, will afford a sheltering effect to the meter which could reduce BNLs by up to 3.5dB (SM 4 App 17); this sheltering effect has been recognised in appeal decisions (CD H54 paragraphs 20-25). Where a BNL meter has to be placed outside of a curtilage, the alternative location has to be shown to be a reasonable representation of the amenity areas it is intended to be a proxy for. Here, this was not the case for Sloothby, Rose Cottage, Coppins Cottage, Habertoft Farm and Spring Cottage.
- 8.21 GPG SB 8 has 6 recommendations for the siting of BNL measuring equipment. In this case only 2 of the BNL measuring locations would comply with GPG (CD J6 page 9). This shows one of the problems of relying on 12-year old data. This is that current best practice, would have resulted in, more representative and lower background noise levels, has not been employed and this evidence was not challenged.
- 8.22 The measurements were not made in amenity areas between 3.5 and 20 metres from a dwelling. The measurement positions did not permit measurement of *"background noise levels judged to be typical/ indicative of the area around the associated dwelling and any other dwellings for which the measurement location will serve as a proxy"*. The influence of noise from local sources was not taken into account when selecting measurement locations. Whilst the person selecting background noise monitoring positions and visiting these locations did record subjective impressions of sources contributing to local ambient noise levels and photographs showing the positions of measuring equipment were provided, residents were not consulted to establish the occurrence of unusual noise events during the monitoring period.

- 8.23 GPG states that the specific location of BNL meters should be agreed with the Environmental Health Officer (CD J6). The appellant's acoustician stated this had been done (APP 11 paragraph 5.15), but in fact it was not and no evidence to counter my investigations revealing it was not done was presented by the appellant.
- 8.24 Rose Cottage is a more suitable measurement location and proxy location for Spring Cottage, Habertoft Farm and Coppins Cottage (SM 2). The appellant's acoustician indicates that due to the reflective properties of the walls bordering the Rose Cottage patio area, this would be an unsuitable location because traffic noise from the C541 would reflect off the house walls and unduly increase the levels measured. This was a truly bizarre statement as Rose Cottage is about 400m further north than Spring Cottage is from the C541, and moreover at this stage of the inquiry it was still be maintained that there was no road traffic noise contamination at Spring Cottage. On this issue the appellant's acoustician back-tracked and said that "if" Rose Cottage was affected by road traffic noise he would not use it due to the reflective properties of the house walls.
- 8.25 This is still a peculiar statement as the reflective properties of the wall fall away considerably when you move more than 1m away from the wall and a free field location 3.5m from walls was readily achievable. The measurement location would not have been put within 3.5m of the wall and so if there had of been RTN contamination at Rose Cottage, reflection would not have been an issue. The appellant's acoustician accepted<sup>19</sup> a suitable location screened from Habertoft Farm and other noise was available. However, he also confirmed his agreement that noise would reflect off of the walls surrounding the Rose Cottage patio, which of course includes turbine noise and thus he confirms actual levels of turbine noise would be higher.
- 8.26 Even using the appellant's, optimistic, figures, the lack of headroom between predicted turbine noise levels and ETSU guidance, means that any lack of attention to detail in the original background noise level survey would result in breaches of the ETSU limits. No empirical evidence or logical scientific argument was provided to show why the corn field at Spring Cottage would be representative of Rose Cottage and background noise levels at Rose Cottage which is further from the C541 and screened from Habertoft Farm would not be lower.

#### Reliability of Data Set

- 8.27 The appellant's acoustician admitted that the noise survey data relied on in the January 2014 proof (APPs 11 & 12) had incorrectly time stamped the entire noise survey as Greenwich Mean Time (GMT) when it should have been British Summer Time (BST) resulting in all noise data figures being 1 hour out. This affects which data is contained within amenity periods and night time periods and in turn affect the BNL polynomials. The data in APP 15, the October 2014 evidence, was said to be correct. Following a review of APP 15, Figure C.12 of which an enlarged version is provided at Document 72, this is

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<sup>19</sup> X-Examination of Dr. Bullmore.

the case, and when the appellant was challenged over the traffic flow assessment further reasons for doubt arose.

- 8.28 Looking at APP 15 Figure C.12 it is impossible to determine if the purple ringed dots and purple dots highlighted have appeared or disappeared are due to an the hour time shift. However, that argument cannot be correct for the highlighted red data points. These data points have not appeared or disappeared, they have simply changed from valid data to excluded data, with again no explanation of why.
- 8.29 The appellant's acoustician stated that he had not looked at the previous ES noise assessment but started from scratch effectively creating a new ES. However, the query regarding data points is not a difference of professional opinion between experts as to what points to exclude, rather it is a change between 2 proofs both compiled by the same acoustician with no explanation or justification.
- 8.30 The time stamps in APP15, Tables A7, A8 and A9 relating to noise levels and traffic flows at Spring Cottage, South Ings Lane and Wilcox Farm are labelled as GMT when they should be BST. The appellant's acoustician was unsure whether the data contained within these tables was correct whether this is simply a labelling error. However, if the data is 1 hour out he agreed that this hour shift would mean that data used would have been from 17:00 to 22:00 hours for midweek amenity periods instead of 18:00 to 23:00 hours.
- 8.31 The effect of the data for APP 15 Figures A6, A7 & A8 also being 1 hour out is that they would look different periods due to some points on the graph slipping into night-time periods i.e. anything from 22:00 hours GMT onward would actually need to be 23:00 hours onwards for BST, and new points would also be added in as the amenity period would start an hour earlier.
- 8.32 Significant discrepancies between APP 12 Appendix C and APP 15 Appendix C were raised. Data points had gone, new ones had appeared, some had changed from valid points to (red) excluded points, and some had become rain affected. There is no consistency to the data and no explanation as to why the data set had changed. It cannot just be explained as a time stamping error. No written explanation was given and it would not have come to light if the changes had been challenged. Spurious changes should have been identified with an explanation given and at best the results can only be approached in a precautionary way.
- 8.33 Up until APPs 14 and 15, the October noise evidence, the background noise level regression analysis had been conducted in a way which was not compliant with ETSU and IoA guidelines. On all but one occasion this analysis significantly overstated the BNLs for a location. As such the SoS still does not have an accurate picture of the BNL polynomials that inform the noise limits.

#### Road Traffic Noise Contamination

- 8.34 This is not whether some data is affected by RTN but where such contamination arises then it shows that it is not reliable for use as that road traffic noise is atypical. The noise environment during the ES survey period,



is not indicative of the noise environment for other times of the year (SM 3 Appendix 1 pages 5 to 9). The C541, which runs parallel with the site, carries a significant volume of tourist traffic during the school summer holidays, sometimes over 10,000 vehicles per day, which increases BNLs above what they would be during other times of the year (APP SM 4 Appendix 14).

- 8.35 The appellant's previous acoustician always denied there was any impact on the BNLs from RTN despite the raw data clearly showing a significant impact. The appellant's current acoustician conceded that RTN did indeed have an impact on BNLs for Marsh House Farm and Wilcox Farm both of which are adjacent to the C541. However, for no known reason he decided that the impact on BNLs in the area would be limited to those 2 properties and that RTN did not propagate as far as 1km to South Ings Lane or 1.3km to Spring Cottage enough to materially affect results (APP 11 paragraph 5.20). As a result he failed to analyse the effect further afield.
- 8.36 Analysis of BNL's when the wind blew from the south i.e. the meter was downwind of the road, compared to when the wind from the north i.e. the meter was upwind of the road proves conclusively that there was a noise source to the south of the Spring Cottage and South Ings Lane measurement locations (SM 7 & 8). In this area, there is nothing other than the C541 that could produce a constant noise source. The analysis shows that the southerly/northerly effect did not exist during night time hours when the road traffic reduces to insignificant levels, which proves that the road is the only real source of the noise. However, this road noise is seasonal, and therefore would not affect noise levels experienced by Spring Cottage and South Ings Lane during the autumn, winter and spring months. Despite this, the appellant wants the seasonally contaminated BNLs accepted and as a result higher noise condition limits to be used for the 16 properties that Spring Cottage and South Ings Lane are proxies for throughout the entire year and at times when the traffic is an order of magnitude less on the C541.
- 8.37 At APP 14 Footnote 2, the appellant's acoustician suggests that I have focussed on the worst case scenario. This is incorrect; SM 7 and 8 clearly shown 3 periods i.e. all amenity hours, weekend amenity hours, and night time hours. In what is a limited and flawed exercise, plotting low wind speeds against background noise levels, the appellant claims that the noise is not related to the RTN on the C541 (APP 14 paragraph 3.27).
- 8.38 The appellant claims he has used a considerably expanded data set, but this is not the case at all. Had he had wanted to use an expanded data set he could have chosen to analyse all noise data collected, regardless of time period i.e. some 2,500 data points minus excluded data, as he was simply trying to find a connection between traffic flow and BNLs. However, what was used was only amenity data, and only in a southerly direction. This limited the data set for the "control" location of Wilcox Farm to some 40 data points. This is smaller than the data set used in SM 7 and 8 for the weekend only amenity periods.
- 8.39 Initially, the appellant's suggestion that the use of data below 4m/s results in only RTN being measured and not wind induced background noises appears to be reasonable. However, the effect of this is a failure to measure all the

contributions of RTN. Reliance on an argument that noise propagation does not increase with higher wind speeds over a distance of about 1km is demonstrated as wrong in the paper by Dr. Keith Wilson titled "The Sound Speed Gradient and Refraction in the Near Ground Atmosphere" (SM 12 Appendix J & Doc 69 - BS 8233 2014). The Wilson paper states that downward refraction conditions rarely exist, even in downwind directions, except when the wind speed is greater than about 5m/s. Thus, the appellant's limit on wind speed has removed all refracted sound from the analysis, thus reducing the apparent impact on the measurement locations at Spring Cottage and South Ings Lane. The appellant's acoustician accepted that increased wind speed could increase the RTN, which undermined his entire approach by limiting the wind speed range. The appellant is unable to provide any evidence to support his claims and effectively abandoned reliance on the Calculation of Road Traffic Noise procedure.

- 8.40 The appellant<sup>20</sup> expects there to be up to approximately a 2dB increase in noise due to downward refraction at higher wind speeds. APP 15 Figure A.6 tries to imply that the control location, Wilcox Farm, shows a clear correlation between traffic flow and BNL. However, the significant variation in BNLs for the same traffic flow rates, and the same BNL for vastly different flow rates, all identified in the appellant's limited data shows little relationship between flow and dB level for Wilcox Farm, where excluded data is inexplicably used. When the data points are analysed, it is clear that most of the higher dB points used were from what should have been excluded data due to the running of the generator at that property. These points had been correctly excluded in the original ES assessment. However, the appellant decided to include some of them in the analysis.
- 8.41 The issue of BNL versus traffic flow rate variations are explained by the appellant on the basis that traffic on the C541 was intermittent and not evenly distributed throughout each hour. The appellant's<sup>21</sup> suggestion that a flow rate of 1,000 cars per hour, i.e. 16 cars per minute or one car every 4 seconds was "intermittent" is not credible. The appellant's assessment and baseline data at Wilcox Farm during daytime periods (APP 15 page 40 Figure C.4) does not correlate with the generic example (APP 15 page 11 Figure A.3) which purports to show a typical chart for a rural property affected by RTN. The appellant could not explain why the Wilcox Farm curve rose as wind speed increased, suggesting that it was because of the number of data points excluded due to the running of the generator. However, Figure C.4 clearly shows increasing noise with increasing wind speed from as low as 1m/s.
- 8.42 The lack of headroom between predicted turbine levels and ETSU guidance means that any error in the appellant's assumption that RTN does not affect Spring Cottage or South Ings Lane would result in breaches. The appellant's own understated calculations for South Ings Lane is affected by around 2-3dB (APP 15 page 19 Figure A.7) and Spring Cottage by 1dB (APP 15 page 20 Fig A.8). This means that there are already breaches when considering the

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<sup>20</sup> X-Examination of Dr. Bullmore.

<sup>21</sup> X-Examination of Dr. Bullmore.

headroom issues. However, for some unknown reason, the appellant does not take this into account in APP 15 page 52 Table C.13.

- 8.43 The appellant's position concerning RTN at Spring Cottage changed<sup>22</sup>. The appellant said that App 15 page 11 Figure A.3 is for a generic case of a rural property and it clearly shows that RTN dominates the BNL readings between 0-4m/s affected by RTN contamination and its findings led to data over 4m/s being excluded. However, there is no other analysis to support this assertion. Moreover, the appellant confirmed that the graph was actually that from Spring Cottage itself, the property that the appellant has consistently argued has no RTN contamination. Once it was apparent that the graph was the Spring Cottage BNL scatter graph and polynomial (APP 12 page 90 Figure C.10), the appellant conceded that you could hear RTN at Spring Cottage, and that it was a contribution to BNLs during an atypical period. The appellant accepted there is RTN contamination at Spring Cottage and that the level of contribution in the data was greater as the period the survey took place in was atypical of the rest of the year regarding traffic flows on the C541. Thus, if Spring Cottage at 1.3km north of the C541 is contaminated by RTN, it must follow that South Ings Lane some 1km north of the C541 is also contaminated.
- 8.44 BNLs measured at Spring Cottage and South Ings Lane are contaminated by atypical RTN from the C541 and do not represent the quiet background noise levels enjoyed by the area during the winter months when the flow on the C541 is significantly reduced. Thus, Spring Cottage and South Ings Lane cannot be relied upon to give representative BNLs for the whole year and should be discounted. Wyche Farm should be used as the BNL proxy for all properties, or at the very least for Spring Cottage and South Ings Lane (SM 2 paragraph 6.20).

#### Planning Guidance

- 8.45 This area has remote rural dwellings with residents enjoying wilderness and quiet tranquillity that has not changed for years in an area with no major sources of urban or industrial use and BNLs are low. The wind farm would permanently impact on that tranquillity and the residents' enjoyment of their homes will be unacceptably reduced.
- 8.46 The appellant submits that if, as MAS suggests, there is an impact from the offshore turbines that area cannot be tranquil. However, this is not true, MAS identified the effects propagating the high levels of offshore noise occur during certain meteorological conditions as highlighted in the Swedish research referenced by the appellant. The conditions when the offshore wind farm would propagate more noise were the conditions when the onshore wind farm would also propagate more noise. Paragraph 123 of the Framework aims to protect this tranquillity. The protection of tranquillity was a reason for refusal at the Shipdham Inquiry (Doc 66 paragraph 16).
- 8.47 BS4142 has been employed as a valid assessment methodology for wind farms (CD J10 & Docs 50, 51 & 68) and is valid when rated noise is above

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<sup>22</sup> X-Examination of Dr Bullmore.

35dB and there would be a significant number of instances when complaints would be likely due to an increase in noise over background levels of 8dB or more i.e. 10 properties during amenity hours and 14 properties at night. The use of BS4142 alongside ETSU is endorsed by NPS EN-1 where it is stated that relevant British Standard should be used: the footnote states this can be BS4142 (CD D2 paragraph 5.11.6). The use of BS4142 alongside ETSU is endorsed by NPS EN-3 (CD D3 paragraph 2.7.54). Here, it states the noise assessment should be included as per EN-1, which supports BS4142, along with an additional assessment of this noise, i.e. ETSU. Thus, policy allows and expects BS4142 to be used alongside ETSU when noise conditions meet its criteria. It is a good benchmark for whether complaints are likely and highlighting impacts on tranquillity and amenity.

#### Ground Condition Factor

- 8.48 Here, using a ground condition factor of  $G=0.5$  in calculating theoretical noise levels is not sufficiently robust to ensure the ETSU noise limits would be met. This approach is supported by scientific papers, the IoA and the appellant's previous acoustician. A report by Cooper and Evans (C&E), "Comparison of Predicted and Measured Wind Farm Noise levels and Implications for Assessments of New Wind Farms" supports a finding that  $G=0$  is a robust parameter to use and that the use of  $G=0.5$  results in an under prediction of turbine noise (SM 3 Appendix 8).
- 8.49 To use the data within the C&E report, one must analyse the wind farm descriptions, page 29, to determine which is the most like Orby Marsh. The site at Orby Marsh is flat and the turbines would be arranged in a group. And the representative site within the C&E report is Wind Farm F. This comparison was not challenged by the appellant.
- 8.50 Table 1, page 30 of the C&E report shows that the approximate distance from the microphone to the nearest turbine for Wind Farm F was 700m. This is less than the distances for some of the nearest neighbours at Orby Marsh, who would be between 1km and 1.2km (APP 15, Appendix E). As such Wind Farm F and Wind Farm E, which is also described as a flat site, with turbines arranged in a line, but with the microphone further from the nearest turbines at a distance of 1.2km, are reviewed.
- 8.51 C&E page 33 Table 2 gives the numerical examples of the authors' findings. The figures need to be amended to reflect practices within the UK. Firstly, all the figures in the Table 2 are 2dB too high, as C&E did not use LA90, the standard wind farm metric in the UK but not Australia. This was not challenged by the appellant. Secondly, as the microphone height was at 1.5m and not the predicted 4m height used within the UK, an adjustment of some 1.9dB would have to be added back on to figures in the table for all lines where  $G=0.5$ . As such all lines for  $G=0.5$  need to decrease by 0.1dB. This was not challenged by the appellant. All lines for  $G=0$  decrease by 2dB, but do not get the 1.9dB added back on. This is because microphone height does not change the result if a totally reflective ground condition of  $G=0$  is adopted.
- 8.52 This shows that for Wind Farm E1- Flat and using  $G=0$ , over predicts by 0.5dB (i.e. 2.5dB over prediction minus 2dB for the LA90 correction), but

using  $G=0.5$  under predicts by 1.3dB (minus 1.2dB under prediction minus 2dB LA90 correction plus 1.9dB microphone height adjustment). For Wind Farm F1 - Flat, using  $G=0$  over predicts by 0.1dB (2.1dB over prediction minus 2dB LA90 correction), but using  $G=0.5$  under predicts by a huge 1.3dB (minus 1dB under prediction minus 2dB LA90 correction plus 1.9dB microphone height adjustment). These results are summarised in text in the paper and C&E state that the *"prediction methods that would minimise the risk of a potential exceedance of the criteria would be the ISO 9613-2 method with completely reflective ground"*<sup>23</sup>. C&E also state<sup>24</sup> in their conclusions that *"the ISO 9613-2 with 50% absorptive ground can under-predict noise levels in some situations and should only be used with caution"*.

- 8.53 The appellant<sup>25</sup> claims that in line with IoA GPG section 4.3.6 an additional 2dB has to be added on for uncertainty as no provision for uncertainty has been included in the calculations within C&E report at Table 2. However, it is important to note that the 2dB addition only arises as a maximum value when no information on uncertainty is available. The appellant has misunderstood the C&E report (page 33 bottom paragraph) which states: *"Measurement of the sound power level included calculation of an uncertainty value which is typically less than 1dB (A) at those speeds considered for this comparison."* This could not be clearer in that it states that measurements included a calculation of an uncertainty value. Thus, as 2dB does not need to be added the above assessment clearly shows that a mixed ground condition factor in a flat site under predicts by 1.1 to 1.3dB. It is worth remembering that the headroom at critical receptor locations is less than 1dB and at times as low as 0.2dB, which implies that the true noise that would be heard would result in create breaches of ETSU. Despite this the appellant seeks to argue that the C & E report does not mean what it states.

#### Ground Condition - Site Specific Issues

- 8.54 GPG at paragraph 4.3.4 states that  $G=0$  provides robust predictions, and that they only recommend using  $G=0.5$  for consistency. However sites are rarely consistent, either with each other or during different times of the year. Therefore, it is consistent with GPG to use  $G=0$  to provide a robust assessment especially in a wet marshland area where so many doubts have arisen over the validity of the analysis and as first applied by the appellant's previous noise consultant.
- 8.55 This site lies within Orby Marsh where the ground is often waterlogged due to the inherently high water table in the Outmarsh. The tide comes in as far as Orby, further saturating the ground and affecting its reflective properties. The area is exposed to hard winter frosts and baked hard in summer and all of these periods can push the ground condition further towards a reflective surface, demonstrating the area as atypically reflective (SM 2 paragraphs 7.13 to 7.15). Apart from challenging whether in winter the ground would be frozen more of the time, this evidence was not challenged.

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<sup>23</sup> SM 3 Appendix 8 internal page 35 top left paragraph.

<sup>24</sup> SM 3 Appendix 8 page 35, paragraph 3.

<sup>25</sup> Evidence-in-Chief Dr Bullmore.

- 8.56 Initially, the appellant justified the use of  $G=0$  (SM 3 Appendix 9, Internal Appendix D paragraph 6.13). This says, "*...it should be considered that a majority of receptors will not be listening to the wind farm in "free-field" conditions. They will be, typically, local residents who are using the environs of their gardens and dwelling houses.*" The same reference says that using a hard ground condition would "*...indicate the highest levels which are likely to occur at a free-field location*", but goes on to confirm that using  $G=0$  would be "*...representative of the levels which will be experienced when a receptor is located within a garden with the normal façade of a dwelling house and other structures in close proximity*". This is a good description of the houses at Orby Marsh particularly the nearest dwelling, Rose Cottage.
- 8.57 Despite saying that  $G=0$  gives robust predictions, GPG calls for the use of  $G=0.5$ . However, when applying this factor very little headroom exists. Thus, when the ground conditions tend to be slightly harder than  $G=0.5$  allows for, breaches of the noise condition would occur.

#### Wind Shear

- 8.58 The appellant's diligence towards taking account of wind shear impacts on noise has been arbitrary. The ES had no site specific wind shear factors. However, when it was exposed that when flat lining was carried out correctly the predicted turbine noise levels would breach ETSU limits, the appellant suddenly produced site specific wind shear data that had been taken 2 years prior to the background noise survey, i.e. some 14 years ago, apparently in order to obtain further head room for turbine noise.
- 8.59 When the appellant first calculated the amenity period wind shear coefficients, the all amenity period hours were used<sup>26</sup>. As well as the 18:00 to 23:00 hours period every night, the 13:00 to 18:00 hours on Saturday and 07:00 to 18:00 hours on Sunday were included to calculate the average. This had the effect of bringing the average shear down to a figure that was unrepresentative of the true shear figures that would be experienced during the evening. This results in an increase in the apparent BNLS and the all-important noise condition limits.
- 8.60 The use of 18:00 to 23:00 hours for calculating amenity period wind shear coefficients was detailed in the GPG SGN 4 at paragraph 4.2.8. It is also basic common sense that you do not use a period with low shear to calculate an average for a period with higher shear. There is no rational reason why the appellant would do this other than to bring the shear value down, which in turn would reduce the predicted impact of turbine noise at lower wind speeds. The appellant's only defence was that the original method for including periods of inherently low shear in the averaging calculations was that "*there was debate internally at Hoare Lea at the time about it*"<sup>27</sup>. This is not a robust approach and is not explained anywhere in the evidence. My own shear calculations only ever used 18:00 to 23:00 hours for the amenity hour wind shear. The lack of headroom between predicted turbine levels and

<sup>26</sup> X-Examination of Dr Bullmore.

<sup>27</sup> The appellant's noise consultants.

ETSU guidance means that any error in the appellant's wind shear would result in breaches of ETSU limits.

ETSU Headroom – Analysis by Mrs Smith.

- 8.61 The headroom between predicted turbine levels and ETSU limits is not sufficient. At every stage, the appellant's proposal has been shown to be unworkable within limits, and at each stage the appellant has then changed a parameter to try and regain some headroom. Noise impact assessment graphs (SM 4 Appendices 15 and 16) have used BNL data from Wyche Farm for all receptor locations mentioned in the survey. The wind shear has been calculated using only periods when wind shear exists, i.e. 18:00 to 23:00 hours as per the GPG and 2 standard deviations have been used to cover 98% of the year's potential shear (SM 2 paragraphs 8.20 onwards).
- 8.62 The results are extremely worrying and show; 10 properties breach ETSU limits; 5 properties are within 2.5dB of ETSU limits; 6 properties within 3.5 to 4.5dB of ETSU limits; 10 properties have BNLs of 8dB or more below predicted turbine noise levels (i.e. when turbine levels are over 35dB), resulting in the likelihood of complaints likely and a major impact on the semantic scale. On the ETSU night time limits, 14 properties have BNLs of 8dB or more below predicted turbine noise levels, again complaints are likely and a major impact on the semantic scale. The above breaches do not include the cumulative noise impact from the offshore wind farms. When these are taken into account headroom would reduce further and result in even more breaches.
- 8.63 The worst affected property, Rose Cottage, has a large patio facing the wind farm, bordered on the north and western sides by the property itself, with the bench seat used to the right of the large patio doors and against the wall of the property. Rose Cottage also has a second seating area with a bench on the southern gable end of the single story extension, again right next to the wall. These 2 seating areas would experience an additional 3 to 6dB of turbine noise due to reflection. Considering that Rose Cottage is one of the worst affected properties in terms of ETSU breaches, the well-recognised issue of reflection would ruin their amenity, making their outside areas at times completely unusable. Rose Cottage is a truly tranquil location highly valued by the residents. The appellant confirmed<sup>28</sup> that the issue of reflection would occur at Rose cottage as detailed above.
- 8.64 The appellant's submissions imply that although there may be errors in their data, they are too low to be of any consequence. The fact is that all of these errors do change the BNL curves and in many places do affect the noise limits, and so are critical as a robust and fair condition cannot be formulated. Further the extent of errors means that properties with little headroom such as Rose Cottage (0.2dB at 5m/s) indicate the analysis simply cannot be relied upon and compliance is not demonstrated.

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<sup>28</sup> X-Examination of Dr Bullmore.

### ETSU Headroom Appellant's Analysis

- 8.65 The appellant has always maintained the wind farm can be operated within ETSU limits, despite being forced to change every parameter they can to try to redress the continual errors that have been exposed. At no point has the appellant carried out an analysis of the impact of the wind farm noise on the local residents' amenity, despite many properties being within 3dB or less of the upper limits with one as close as 0.2dB. The appellant's noise impact assessment graphs in APP 15 Appendix C, has used the background noise data collected at Spring Cottage, South Ings Lane, Wyche Farm and Sloothby despite deficiencies with 3 of those locations.
- 8.66 The correction of coordinate locations for all 21 receptors, and the move to correctly calculate wind shear meant that the appellant's APP 15 Table C.11 C11 which shows predicted turbine noise levels at receptor locations, was different for almost every property at every wind speed compared to the APP 12 Table C.11. These differences seen in APP 15 Table A.5. Positive values imply the predicted turbine noise level at that property and show that wind speed has increased since the January proof. Out of 21 properties, the turbine noise predictions has increased at 19 of them at every wind speed up to 6m/s, with critical properties seeing an increase of up to 0.9dB at the pinch point wind speed of 5m/s. This is significant.
- 8.67 Despite the appellant's APP 15 Table C.13 only going to one standard deviation, graphs at APP C.14 to C.55 helpfully show the 2 standard deviation error bars, which shows the potential turbine noise at receptor locations, which could happen for a further 58 days a year. This is a significant period that the appellant has ignored. If the appellant's tables and charts are accepted as being representative of the amenity areas of all properties, are unaffected by RTN, with no periods of hard ground, with no cumulative impact and a belief that wind shear calculations are completely accurate, this development should still be refused on noise grounds because there is just no headroom at properties such as Rose Cottage, Spring Cottage, Coppins Cottage and Habertoft Farm. The inevitable consequence is regular complaints and testing of the condition. The appellant agreed the condition be limited to 40 data sets during complaint conditions and this means when levels exceed the average line, which is expected approximately 50% of the time, breaches are expected.
- 8.68 If the appellant's data is accepted, Rose Cottage in particular stands to suffer the most from wind farm noise it being within 0.2dB of ETSU amenity limits without taking into account the reflective properties of their patio and seating areas and that 50% of time levels exceed the average.
- 8.69 Overall, the appellant's figures are worrying when only considering one standard deviation wind shear but more so when 2 standard deviations are considered (Doc 73). At one standard deviation one property breaches ETSU limits and 9 properties are within 3dB of ETSU limits. At 2 standard deviations 4 properties breach ETSU limits and 10 properties are within 3dB of ETSU limits. The appellant stated<sup>29</sup> that there is nothing about headroom

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<sup>29</sup> Answer to Inspector's question.



within ETSU or the IoA GPG, and that if you define noise limits, providing the assessment prove you are compliant with those noise limits that is all that is required.

- 8.70 This position is unacceptable at Orby Marsh notwithstanding that predictions are of average levels rather than those occurring during complaint conditions. The appellant has not proved that this wind farm could operate in compliance with ETSU at all; the numerous errors in the data analysis, constantly changing parameters, and failure to consider cumulative impact all combine to demonstrate that BNLs are understated background noise levels, noise limits are overstated and actual turbine noise levels are under-predicted the. The outcome would be frequent non-compliance, leaving residents to try to gain protection using the immensely complex and time-consuming noise condition. This would involve months of tests and potentially lengthy legal arguments. A noise condition should not replace a thorough and robust ES.
- 8.71 The appellant submits that a lack of headroom in the current ES does not matter because a quieter turbine could installed (APP 11 Table 1). This makes no sense, because, if adopted, it would mean there is no point in conducting an ES at all, as all wind farms would simply have to comply with a noise condition and not have their noise impacts on receptor locations tested. The appellant provided the required data for testing the candidate turbine in the ES. However, that is not the case for the other models in APP 11 Table 1. Therefore, it would be unreasonable to blindly accept that another turbine would necessarily meet the limits at the pinch point with a more comfortable margin if this assertion cannot be tested. A noise condition should not replace a thorough and robust ES. Despite the appellant's blasé treatment of headroom, Inspectors have considered it an important issue in other wind farm applications<sup>30</sup>.

#### Cumulative Impact

- 8.72 The appellant failed to assess cumulative impact until February 2014. MAS demonstrate that there is a cumulative issue, the consequence of which would to lead to the need to adjust downwards the limits at all wind speeds and that exceedance of limits was extended over a wider range of wind speeds at some properties. Notwithstanding this evidence, the appellant continues to argue that there no contribution to the BNLs from the offshore wind farms. However, the appellant's reliance on a shoreline effect of 15 to 20dBA is flawed and the calculation, which assumes offshore turbines should be assessed as if point sources, is manifestly wrong. The appellant recognised this error (APP 15 page Appendix G paragraph G26). This work identified an effect of about 0.5 to 0.6dBA and the noise limits should have been adjusted. Following the science as supported by the IoA SGN 6 (CD J19) on propagation over water, the evidence clearly shows that cumulative impact leads to ETSU exceedances at wind speeds of 6m/s at one property. This was accepted that the conservative assessment by MAS was correct and it logically follows that this exceedance would arise at the critical wind speed where headroom was lower than found for 6m/s in the case of 5m/s wind speeds.

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<sup>30</sup> Doc 50 paragraphs 80 & 81; CD H20 paragraphs 112, 113 & 117; CD H42 paragraphs 11.56, 11.60 & 11.66.

- 8.73 The appellant has not made a full, thorough, or correct cumulative impact study, and has not therefore correctly adjusted APP 15 Table C.13 for all wind speeds to show the further reduced headroom and increased number of breaches in ETSU at the receptor locations. This means the SoS does not have accurate data from the appellant to be certain that ETSU limits can be met. The evidence is sufficient to reasonably assume the already scant headroom would be reduced further to unacceptable levels, and it is inevitable there would be multiple ETSU breaches at multiple properties at 5m/s wind speed, the most critical speed for this site.
- 8.74 The need to consider cumulative effects is set out in GPG at paragraph 5.1.1. This states that the absolute noise limits and margins above background should relate to the cumulative effect of all wind turbines in the area which contribute to the noise received at the properties in question. The requirement to consider cumulative impact is also covered in ETSU at page 46 where it acknowledges the cumulative effect of many turbines at some distance from a residence may also increase the noise levels around a property and that the impact should relate to the total wind farm noise impact without increases above the ETSU limits through iterative development. The appellant accepted these points when cross examining the evidence of MAS.
- 8.75 To take into account a cumulative impact, you are required to deduct the contribution as calculated from the existing wind farm (the offshore turbines) from the allowable limits for the Orby Marsh turbines. This has not been done by the appellant and the inquiry was not presented with any analysis of the adjusted limits to be applied for all wind speeds. The appellant had failed to appropriately consider the potential cumulative noise impact from the 129 offshore turbines situated 5.5km off the east coast. No reference was made to them at all in any of the appellant's original submissions although it is claimed they were considered. This is not credible as a thorough assessment would have referenced the nearby wind farms and explained why they were not considered to contribute to the total impact.
- 8.76 The objective of Document SM 14 was to determine if a cumulative impact assessment was warranted and if contributions were material. The conclusion is that it was indeed needed and furthermore there were significant noise level increases at critical wind speeds warranting a full cumulative assessment at all wind speeds using the procedures supported in IoA SGN 6 (CD J19).
- 8.77 The figures produced by MAS in SM 14 were only calculated at 6m/s and 8m/s to show there was a cumulative impact issue that was material. The appellant suggests that the objector should have produced a full cumulative impact assessment of the noise generated by the offshore wind farms. However, it has never been a requirement that a Rule 6 Party produce an environmental assessment of turbine noise on behalf of an appellant. The inquiry was adjourned to allow the appellant to consider the need to undertake such an assessment. The appellant's rejection of cumulative impact as being material is misconceived. The appellant could have used the recognised procedures in IoA SGN 6 to show what changes would be needed at all wind speeds as well as provide a revised table of noise limits for the

planning condition. The appellant chose not to do this and chose to rely on a flawed assertion that the noise impact of the offshore turbines was nullified by an exaggerated shoreline effect.

- 8.78 The MAS analysis compared the predicted levels provided by the appellant in January 2014 and how they increased due to cumulative impact. Adjustments for wind shear coordinate locations and data errors in the appellant's predictions have increased predicted wind farm decibel levels in the September 2014 analysis. Recalculation would be required based on the new September values which were only made available 2 weeks before the inquiry to assess the degree exceedances had increased. There was not any opportunity to introduce further evidence immediately prior to the inquiry and therefore to examine the change and any increased exceedance of limits in the appellant's new evidence was not achievable. Such an analysis was not provided by the appellant but it is a clear conclusion of science that the margins would be reduced and frequency of noise limit exceedances increased.
- 8.79 SM 14 and its predictions clearly demonstrate that the contribution from the offshore development cannot be ignored and would increase noise levels in the area from wind development above those indicated from the Orby Marsh development in isolation during certain meteorological conditions. A range of methods were used in the calculation of cumulative impact to demonstrate however approached, cumulative impact was a material consideration. MAS tried to replicate the dB levels at receptor locations from the appellant's January report to enable comparison. As explained<sup>31</sup>, the only way decibel levels could be matched to the appellant's January evidence, APP 12, was if receptor locations were adjusted outwards by 30 to 80m. However this then meant properties to the east of the Orby Marsh site were considered to be between 30b to 80m closer to the shoreline which would have increased their cumulative impact from the offshore turbines unfairly. To compensate for this and because exact offshore coordinates were not available to MAS, the coordinate locations for the offshore turbines were moved some 200 to 500m further offshore. This ensured that the analysis was conservative.
- 8.80 SM 14 showed results for ground conditions over the land element of the distance for both  $G=0.5$  and  $G=0$ . However, it should be noted that IoA SGN 6 (CD J19) states that if more than 50% of the distance between the turbine and the receptor is over water, then a figures of  $G=0$  should be used for the entire distance. Even with the conservative approach detailed, there are still issues, and when viewing SM 14 Table 1.11 (6m/s) and Table 1.13 (8m/s), which correctly uses  $G=0$  over land, there is still a cumulative impact when comparing Orby Marsh alone (NM1) and Orby plus the offshore turbines (NM4) using the IoA SGN 6 equation.
- 8.81 The appellant submits that the modelling used by MAS was outside of its parameters but this is not the case. The IoA formula used in SGN 6 was taken from the Swedish paper (Doc 77) which is specifically about the noise from turbines at a distance out to sea of over 9km and a total distance of 9.7km.

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<sup>31</sup> Mr Stigwood Evidence-in-Chief.

The only thing that has changed with IoA SGN 6 is that the paper now says it does not cover offshore wind turbines. The IoA GPG still refers to SGN 6 as applying to offshore turbines and there are references to the sea within it. All equations to be used have not changed since the draft SGN 6 where it said it did cover offshore turbines. It should be noted that the appellant accepted the IoA SGN 6 guidance was applicable and this is agreed in APP 15 Appendix G paragraphs G27 and G28 at pages 105 and 106.

- 8.82 The appellant states that, using MAS's figures in SM 14, only one property was affected by cumulative noise impact to the extent that an ETSU amenity hours breach of the limit occurred. This property was Wyche Farm which has, according to the appellant's App 15 page 53 Table C.13, only 0.9dB of headroom under ETSU limits at 6m/s. The cumulative impact from the offshore turbines in SM 14 Table 1.12 shows an increase of 1.2dB, which would create a breach of 0.3dB at that wind speed. However, MAS makes it clear these were not the only wind speeds that cumulative noise was increased in dB levels at receptor locations from the offshore wind farm.
- 8.83 Only shown 2 wind speeds are shown in SM 1. However, the appellant's APP 15 Table C.13 shows the headroom at Rose Cottage at 5m/s at just 0.2dB, whilst the figures shown in SM 14 Table 1.12 show that Rose Cottage has a cumulative impact of 0.7dB at 6m/s and 0.8dB at 8m/s. It would be remarkable in science for this not to cause an increase at 5m/s. Despite not having the data at 5m/s, it is logical to conclude that a reduction in the noise limits would be required due to cumulative impact at 5m/s as there is still offshore turbine noise contribution at this wind speed and any reduction in limits would result in a breach.
- 8.84 Without a completed reliable assessment of cumulative impact at all wind speeds from 0 to 12m/s it is not possible to provide tables of adjusted limits for the noise condition tables of values. The appellant chose not to provide information on the effect on the already revised limits through using the procedures in IoA SGN 6. Those currently put forward were on the basis there is not any cumulative impact and they allow too much noise if cumulative impact is accepted as occurring. It is impossible to determine the reduction in controlling decibel limits for each wind speed day and night without the appellant correctly determining the cumulative contribution from the offshore turbines for all wind speeds and locations. The analysis undertaken by the appellant clearly understates the noise contribution but in any event does not adjust condition values to reflect the offshore contribution and enable an assessment of the outcome where it is accepted there is a cumulative effect.
- 8.85 The appellant states that the work by MAS is inaccurate because it had not considered degradation of sound power over the land. This is categorically not the case. It was demonstrated in the evidence that the formula applied by MAS is based on the outcome of empirically based research but rendered conservative by assuming greater attenuation over land through the use of point source propagation for that part. MAS has shown how the Swedish study on which the formula was based found propagation effects extended beyond downwind angles and thus cumulative effects would occur over a wider arc of wind directions. This evidence was not challenged by the appellant.

## Appellant's work on cumulative impact

- 8.86 The appellant's noise consultant<sup>32</sup> first visited Orby Marsh in December 2013 and admitted that he had not seen the offshore turbines at that time. The offshore turbines were not included within the appellant's revised assessment because at that time it was not thought that they would have an effect on the BNLS at Orby Marsh. However at that time, the appellant had not interrogated any data to support approach.
- 8.87 Given that SM 14 shows that cumulative impact does need to be addressed one would expect the appellant to have conducted a thorough cumulative impact assessment. However, the APP 14 proof does not comprise a thorough cumulative impact assessment at all. The appellant produced a report that only considered cumulative impact at one wind speed, 10m/s, instead of the full range needed to make a reliable assessment of impact. Furthermore that assessment used the method producing the lowest possible cumulative values by assuming the noise propagation behaved as if completely over land and were point sources for the full distance. On the appellant's own evidence, this method led to errors (APP 15 Appendix G paragraph G26). It should be noted that the 10m/s wind speed chosen by the appellant is not a speed where breaches are likely to occur. However, from APP 15 Table C.13 at 5 to 6m/s wind speeds the rated noise from the Orby Marsh turbines comes very close to ETSU daytime limits, with 5 properties being 1dB or less under ETSU limits using the appellant's own assessment approach (Wyche Farm, Spring Cottage, Habertoft Farm, Coppins Cottage and Rose Cottage).
- 8.88 The appellant relied on the work of Lisa Johansson, referred to as IoA SGN 6 REF 1 in APP 15 Appendix G paragraph G27, for his work and conclusion. The document is titled "Sound Propagation Around Off-Shore Wind Turbines – Long-Range Parabolic Equation Calculations for Baltic Sea Conditions" (Doc76). The appellant states that APP 14 Figure G.14 paragraph G.41 taken from the Johansson paper shows there is a significant effect on sound attenuation as sound pressure levels propagate across the shoreline and onto land. The appellant states that this attenuation is between approximately 15 to 20d at App 15 Appendix G paragraph G.43 that *"the reductions in sound pressure levels experienced inland from offshore wind farms are primarily controlled by the breaking down of meteorological effects when passing from sea to land, as opposed solely to changes in the surfaces over which propagation is occurring"*. Moreover, the appellant<sup>33</sup> accepted that the changes in dB levels referred were due to the sound moving from over the sea to the land at the shoreline. The appellant's graph at APP 15, Appendix G Figure G.41 page 111 was taken from midway through Lisa Johansson's iterative process (Doc 76 page 73 Figure 32) to claim a shoreline effect of 15 to 20dB. However, this graph does not in fact represent the effects claimed as it compared only wind profile change and not surface change leading to spurious results. The suggestion that the appellant's analysis is a misapplication of the research was not challenged. However, the appellant did try to introduce a new argument in the second paper that supported his

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<sup>32</sup> X-Examination of Dr. Bullmore.

<sup>33</sup> X-Examination of Dr. Bullmore.

arguments i.e. that the 15 to 20dB reduction is primarily a shoreline effect, e.g. a reduction as the sound passes over the shoreline (APP 15 Appendix G paragraphs G.27 & G.43; Doc 77).

- 8.89 Notwithstanding the above, the appellant stated<sup>34</sup> that the shoreline affect was only in the region of 2-3dB, and that the 15 to 20dB drop was actually a reduction from the shoreline inland to the receptor locations. The appellant attempts to support this by reference a different paper to support the claim of a 15-20dB drop as occurring not just over the shoreline but instead over the land as the sound travelled inland having left the shoreline. The appellant also claimed the further figures in the thesis of Lisa Johansson which were not referenced in support of this argument and in particular that Figure 39 in the Lisa Johansson study and not those on pages Page 37 as suggested by MAS. The appellant conceded that this figure did not show a 15-20dB reduction as first claimed as the difference between the predicted sounds propagating over water was only 2 to 3dB different to that propagating over land; the former assuming the cylindrical propagation rule of 3dB per doubling of distance.
- 8.90 The new rationale adopted by the appellant used the Swedish paper mentioned APP 15 Appendix G paragraph G27 as SGN Ref 2. The paper is titled "Long-Range Sound Propagation over the Sea with Application to Wind Turbine Noise" by Mathieu Boué (Doc 77). However, this paper was only referenced in the appellant's APP 15 Appendix G at paragraph G.27 to show that recommendations contained in IoA SGN 6 were derived from the Swedish research paper, along with the paper by Lisa Johansson (Doc 76). The appellant agreed that he had not referenced the Swedish paper in his proof, APP 14, to support the assertions of any kind of decibel drop from the shoreline inland.
- 8.91 The Swedish paper does not support the appellant's conclusions either. The appellant states that the 14dB drop identified in the Swedish paper would occur at Orby Marsh is referenced at Doc 77 page 24, where a ground damping effect of about 14dB is discussed in relation to a frequency of 200Hz. However, it was conceded that the suggestion that there would be a damping effect at 200Hz did not mean there would be a 14dB damping effect in general. The appellant accepted that it did not occur at the other frequencies studied and when finally concluding on the Swedish paper, did not challenge that their approach to the derivation of the empirically based formula they developed was on the basis the 200Hz anomaly was a general occurrence over land and not limited to this case and that they had adjusted for it in deriving their formula.
- 8.92 The appellant claims that the 14dB damping affect at 200Hz highlighted in the Swedish paper was site specific, meaning that the effect could be higher or lower at other sites and also at other sites could occur at other broader ranges of frequencies and implied it could therefore be higher at Orby Marsh. However, the appellant agreed that the Swedish Paper clearly shows that this is not a site specific phenomenon, having also occurred at Saltholmen and

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<sup>34</sup> Evidence-in-Chief of Dr Bullmore.

that the Swedish study was specifically interested in identifying this narrow band effect at one specific frequency and that it is not a wider broadband effect (Doc 77 pages 5 & 24). This proves that this is a repeatable issue at 200Hz and it does not support a reduction in A weighted broadband noise level. Moreover, it only relates to one small contribution at 200Hz which was factored into the Swedish study and their formula as used in IoA SGN6.

- 8.93 Wind turbines do not emit noise at only 200Hz and therefore it needs to be remembered that the issue with 200Hz noise is just one frequency in the octave band range, and its reduction does not therefore mean that the A weighted sound, dB(A), would reduce by 14dB as it is a small constituent as the appellant pointed out when confirming it was a pure tone. The dB(A) being what we consider when reviewing noise impact from turbines. The overall reduction in A weighted noise would be of the order of only 2 to 3dB in total as concluded in both reference documents and demonstrated by the differences between propagation fully over the sea and part over land as reflected in Figure 39 of the work of Lisa Johansson a point finally accepted by the appellant<sup>35</sup>.
- 8.94 The appellant accepted that SGN 6 made no reference to the shoreline effect, nor is this effect included within the formula developed in the Swedish research and adopted in SGN6. This point was made by MAS during evidence-in-chief when discussing the paper and was not challenged.

#### Cumulative Impact - Conclusion

- 8.95 Regarding the appellant's reliance on the Swedish paper, Document 77 page 8 section 1.3 covers the issue of shoreline effect stating "*The comparison with constant sound profile and ground boundary conditions shows an average attenuation for low frequencies of 3 dB.*" The 14dB damping effect is only for 200Hz and does not have anywhere near a 14dB effect when you consider its small contribution to the overall A weighted noise that arrives at the receptor locations. In any event the appellant eventually accepted that the Swedish treated it as a universal factor applying to land based propagation.
- 8.96 MAS's methods are conservative in their approach but use relevant formulae within their originally designed parameters. Cumulative impact from the offshore turbines is clearly demonstrated resulting in exceedances at Wyche Farm even when the appellant's January 2014 predicted values are used and it is inconceivable that further exceedances would not arise at other wind speeds. In any event adjustments to limits are required at all wind speeds for the full effect of cumulative impact to enable an enforceable condition to be derived that meets the principles of ETSU and the IoA GPG both of which reflect the need to limit the total wind turbine noise .

#### Amplitude Modulation

- 8.97 It was agreed that control by condition is necessary. The appellant originally proposed the ReUK condition but later abandoned reliance on that condition

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<sup>35</sup> X-Examination of Dr Bullmore.

accepting a scheme style condition would be acceptable. There is clear written evidence to the inquiry that the ReUK condition fails to control EAM.

#### Conclusion

- 8.98 The appellant has conceded a significant number of points raised over the last 2 years which demonstrated that the original ES is not robust. Data analysis has been conducted in such a way that data sets have been changed and manipulated repeatedly over the last 2 years without any explanation. Even the most recent analysis and findings from the appellant, APPs 14 and 15 are completely different again from the January position APPs 11 and 12, and there are still errors in the appellant's work. Planning policy, comments from the appellant's previous noise expert, the C&E report, IoA guidance and local knowledge confirm that a fully reflective ground condition should be considered in order to afford residents the best level of protection, especially considering the lack of headroom available to some properties.
- 8.99 Given the appellant's admission that Spring Cottage is contaminated with atypical RTN, Wyche Farm is the only uncontaminated location which best represents the existing background noise levels for all the other properties throughout the whole year. Using Wyche Farm BNLs for all properties highlights the number of breaches of ETSU that would occur at numerous properties, and for those properties that do not breach ETSU limits, the level of turbine noise over BNLs would mean that complaints are likely.
- 8.100 The appellant has failed to adequately address the issue of cumulative impact using a flawed analysis, whilst the MAS work has demonstrated that there was clearly a cumulative issue which would require noise limits to be reduced thus reducing headroom and creating more frequent breaches of the noise limits in MCL/AJB/6A table C13.
- 8.101 At several properties, the appellant has not proved that the wind farm could operate in compliance with ETSU limits, and for properties where it is within limits, the increased level of noise, over inherently low background noise levels, would mean that complaints would be likely.
- 8.102 The appellant's numerous errors in the data analysis, constantly changing parameters, and failure to consider cumulative impact all combine to demonstrate that the appellant has understated BNLs, overstated noise limits and under predicted the actual turbine noise levels. With the astonishingly small headroom at some properties, it is likely that breaches would occur. A noise condition should not be used to replace a thorough and robust ES.
- 8.103 The area is designated as one of the most tranquil in the country by the CPRE and residents value this tranquillity very highly. This tranquillity would be ruined by noise from the proposed development.

#### Response to the Appellant's Statement of Support

- 8.104 Mrs Smith responded as the ward member for Willoughby and Sloothby ward and not in capacity as an individual resident and Rule 6 party on noise issues.
- 8.105 In a ward of approximately 1,989 residents, the appellant's door to door survey has made contact with 69 people, which equates to only 3.5%. Of



those only 31 were in support, which equates to just 1.5% of the total. It is astonishing that the appellant claims a victory with the comment that "*a greater number of residents supported than opposed Orby Marsh Wind Farm during door-to-door canvassing is an important reminder of the significant support for the proposals in the across the local area.*" One extra person from their exceptionally limited survey supported the proposals compared with those who objected. This is hardly significant.

- 8.106 Experience of attending Parish Council meetings indicates that the general consensus is nowhere near a supportive one for the scheme. One Willoughby Parish Council meeting was attended by over 50 residents and all objected to the proposal.
- 8.107 Orby Parish Council conducted a survey to gain the views of as many of the residents in the village as possible and of 41% of residences replying to the survey, which equates to 60 families and about 120 people some 82% said they were against wind farms i.e. this equals 98 people in the Parish of Orby alone.
- 8.108 The results of the telephone survey have been weighted because the survey failed to contact an even distribution of the age groups represented in the ward census. Because only 5.8% of those contacted overall were males aged 18-44 years, and the total percentage of males of that age range in the 5 wards is higher at 13.3%, the appellant has weighted the results so that every male aged 18-44 years does not count as one response but as 2.16 responses.
- 8.109 Similarly, 25% of those surveyed were females over 65, but the census shows the total percentage in the area of over 65 year old females is less at 18%. Thus, the appellant's weighting means that the response of any woman over 65 only counts as 0.677 of a response. This means that the vote of every male aged 18 to 44 is worth over 3 times that of the vote of a woman aged over 65 years. Yet both are individuals affected by the same wind farm and their responses should be treated equally. This clearly has the effect of changing the results. When the biased and unfair weighting is removed, the statistics tell a different story with those in favour 39% and those against 55%. The results of this limited survey should be afforded little or no weight as the appellant has, by his own admission, not treated all residents as being equal.

## 9. The Case for Orby Wind Farm Action Group (OWAG)

OWAG's case includes written submissions by Mr Sinclair, Mr Enderby and Mr Constable (OWAG 1 to 8). Mr Enderby spoke to his submissions at a Village Hall session, the material points of which are set out at paragraphs 10.8 to 10.14 of this report.

The material points are:-

- 9.1 OWAG was formed to represent the views of objectors concerned about the impact on their living conditions and the enjoyment of the countryside by them and visitors.
- 9.2 In principle, OWAG supports Government policy for electricity generation from appropriately sited renewable sources and accepts the desirability of increasing production from a range of technologies. OWAG believes that here the individual and cumulative adverse impacts of this scheme are not outweighed by its benefits. The harm includes adverse impacts on: landscape character; visual amenity, living conditions; ecology; highway safety and disruption and danger during the construction period and telecommunications. Whilst the perceived benefit is a contribution to the production of renewable energy and the local community, no evidence of such benefit has been identified or submitted. The scale of the harm or benefit is a key factor in the planning balance i.e. the smaller either is, the less it weighs in the balance.
- 9.3 DECC has indicated that the 2020 target for the UK supply of renewable energy derived via onshore wind farms has been achieved through approved projects, without the need for additional projects (Doc 79). Thus, new projects should not proceed past the planning process as, under the relevant PPG, they do not meet the required standards to address the negative impacts they have on the surrounding area and residents.
- 9.4 The objective of The Localism Act 2011 is to devolve decision making powers from central Government back into the hands of individuals, communities and councils. Here, LCC, the Ipa and the 8 local Parish Councils all oppose this development. Sir Peter Tapsell MP has voiced his concerns and draws attention to the Prime Minister's comments which make clear the limited potential for onshore wind (Doc 16). The strength of community opposition to this scheme was made clear at the village hall sessions. The SoS's Ministerial Statement of 6 June 2013 supports OWAG's position (CD D8).

### Landscape

- 9.5 The site lies within LCA J1Tetney Lock to Skegness Coastal Outmarsh (ES.V2-6.4.1.4). Amongst its key characteristics is a predominantly intact, rural and distinctive landscape with some manmade influences. The overall landscape character sensitivity of the Outmarsh is considered to be moderate to high, but lower in areas influenced by localised industrial and urban areas. It is a sensitive and essential buffer zone between the coast and the AONB and adjoins LCA I1 Holton le Clay to Great Steeping Middlemarsh. LCA I1 is a predominantly rural landscape with many historic villages which lie within areas of the AGLV and feeds into the edge of the AONB. The transitional role

of the Outmarsh from the AONB to the coast and the long views to and from it are crucial to its importance and to the value placed upon it by both local residents and visitors. Residents are worried; as one speaker said, *"this is our home, our habitat"*. This development would have an acknowledged detrimental impact upon all of those that use the area.

- 9.6 Whilst there were differences in assessment methodology and interpretation of landscape characteristics by the landscape witnesses, there appears to be a consensus that this scheme would have significant visual effects. The appellant confirmed that, *"the development would give rise to significant and quite likely adverse landscape and visual effects – however ...there is not an endless supply of appropriate wind energy development sites"*.
- 9.7 Other than the 2 original turbines at Mablethorpe, the landscape has changed since the 2004 appeal (CD H19). There are operational wind farms at Mablethorpe (16 turbines) and Croft (2 turbines), the extensive offshore wind farms east of Skegness (129 turbines) and several single turbines across the area. A further 150 turbines have been approved and some are under construction. There are several wind farm applications in the planning process or have been declared to be in the scoping stage. There has been a 64% year on year increase in planning applications based on the number of turbines, which equates to 75% increase year on year in the number of schemes. Whilst there is a plateau in the number of turbines in scoping, there has been an 86% increase year on year in the number of schemes.
- 9.8 With this changed context, the appellant appears to have adopted a "fly-tip" mentality approach i.e. rubbish dumped at a beauty spot is normally followed by more at the same site, as there are those who perceive that a bit more will not make any difference; then the beauty spot becomes an unsightly mess. This is the case with turbines in Lincolnshire and highlights the importance of acknowledging the cumulative effect upon the area. If this process of attrition is allowed to continue it would swallow up the big skies and the rural landscape for ever. This result would be irreparable damage to the greater use of the area and the area's survival, development and future.
- 9.9 Whilst turbines have a small footprint, the effects on the landscape and sensitive receptors are not minimal. The turbines would have a blade sweep area of some 3,019 sq. m (OWAG 2 paragraph 2.2.1). This combined with their height and rotation of the blades means that despite their minimal footprint they would be visible over long distances<sup>36</sup>. The ES presents 23 viewpoints with details of a range of attributes for each<sup>37</sup>. However, there is an absence of viewpoints close to the site, with only one inside a 2.5km radius. Moreover, most of the photographs are pallid, mostly taken in indifferent January light and have low levels of colour and contrast. The turbines are not shown sharply in the prevalent conditions, and existing turbines readily apparent in good light are not discernible or may be shielded. Blade movement is readily visible at 15km in normal light and should therefore be evident at all viewpoints on the site visit. Moreover, small

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<sup>36</sup> CD A2, Volume 3, Figures 6.4 to 6.7)

<sup>37</sup> CD A2, Volume 4, Appendix 6.3.

changes in the viewing position would ensure the images would be more representative (OWAG 2, Section 4.2, pages 25 & 26).

- 9.10 Using the lpa's Local Landscape Character Assessment (CD F5) as the base, OWAG assess 16 of the viewpoints as having as broadly the same sensitivity, 6 having a lower sensitivity and 1 with a slightly higher sensitivity. The ES does provide a landscape factor at each viewpoint, but in terms of "quality/value"; noting this difference, OWAG assessed sensitivity as the same for 3 viewpoints, somewhat greater for 16, and slightly less at 4.
- 9.11 Whilst the ES defines all visual receptors as of High Sensitivity, this is inflexible and prevents any comparable assessment of effects, and artificially elevates the eventual assessment of significance. At 15 of the 23 viewpoints, OWAG concludes that receptor sensitivity is lower than the ES. OWAG's methodology<sup>38</sup> deals with the Sensitivity of the Visual Resource. This combined indication of landscape and visual sensitivity produces 1 viewpoint at High Sensitivity, 3 at Medium, 1 below Medium, and the remaining 18 at various fine-tuned levels of Medium/High Sensitivity (OWAG 2, page 31). On this basis, it is possible to construct a broadly equivalent measure from the ES receptor and landscape "quality/value" attributes, which are termed the "RQV Index" (OWAG 2, page 32). This gives 5 viewpoints where the Visual Resource Sensitivity is the same, 11 where it is lower (in some cases much lower), and in the remaining 7 slightly higher. Even allowing for differences in terminology, the ES is insufficiently fine-tuned to reflect the sensitivity of the receiving area, and in over-generalising it, surprisingly over-states it.
- 9.12 Magnitude of Change is at the heart of the proposal's impact, and is OWAG's main area of disagreement with the ES. OWAG's and the ES assessment agrees at 4 viewpoints, but OWAG's produces higher levels and in most cases considerably higher levels at the remaining 19 (OWAG 2, pages 33 & 34). In addition to the ES viewpoints, OWAG identified 3 others within 2.5km of the turbines which show the true impact of the scheme. These are the same as the lpa additional viewpoints G, J and K. (OWAG 2, page 36).
- 9.13 As to cumulative impact, the turbines would be within 10km of the offshore turbines. From all viewpoints to the west of the site, the turbines would visually merge with the offshore turbines. At VPs closer to the coast and east of the site, the observer would have "front and rear views".

#### Living Conditions

- 9.14 Residential Amenity (RA) comprises noise, shadow flicker and visual intrusion (Enifer Downs, CD H39, paragraph 43). It includes views of residents as they move about the area and views in the mind's eye when the turbines are not actually in sight (CD H51, paragraph 47, CD H28 paragraph 14). There is no right to a view, but private and public interests may coincide when a proposal would have such a severe impact on the outlook from a property that it would make it a significantly less attractive place to live (CD H6, paragraph 23, CD H33, paragraph 66). Such an impact on one or 2 dwellings alone would be

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<sup>38</sup> OWAG 2, Section 3, pages 12 to 22.

sufficient to render the harm from a wind farm unacceptable (CD H2, paragraphs 61, 63 & 129, CD H44, paragraph 16.35).

- 9.15 Over 150 properties within 3km of the site were surveyed for the ES. Of these, over 50% (81) are judged would experience significant visual effect<sup>39</sup>. The visual impact of the scheme on each individual resident living in the area is a matter of public interest and OWAG fails to see how the public interest can be safeguarded by a development that would be visually harmful when seen from several neighbouring properties. The harmful effect on residents, both individually and cumulatively, weighs heavily against this scheme.
- 9.16 OWAG has concerns about the accuracy of the Residential Visual Assessment (CD A2, Volume 4 Appendix 6.6). One example is Property 95, Spring Cottage, where the assessment refers to “...looks to have large farm buildings partially blocking the view”. The owner of Spring Cottage has confirmed that he has no farm buildings and never has had (Doc 28). Whilst a large number of properties were visited, there is no evidence that any of these were entered<sup>40</sup>. All the judgements were made from publicly accessible locations. Although some gardens were said to be entered there is no record of which these were and the specific impact at any of these properties has not been identified or adequately assessed. The end result lacks detail and accuracy. OWAG submits that many of the conclusions are speculative and vague and lack appropriate detail to adequately assess the visual impact of the proposed development. Therefore, the assessments should be treated with caution.
- 9.17 There are 12 dwellings within 1 to 2km of the turbines who would experience a substantial adverse visual impact (OWAG 2, paragraph 5.1.3). It is accepted that no one dwelling would fail the “Lavender Test” on visual grounds alone (CD H39). However, the effect on these dwellings should be considered with others as a “sample in the round” and weighed in the balance when assessing the impacts of the development as whole.

#### Ecology

- 9.18 Various agencies have made comments and issued policies on the impact of inshore wind farm development on the ecological balance and diversity of an area. The RSPB say “...evidence suggests harm can occur due to: disturbance, habitat loss (direct or indirect) and collision”. The Lincolnshire Wildlife Trust policy on turbines states, “wind energy developments may have an impact on wildlife including the cumulative and in combination effects when more than one wind energy scheme is developed in an area”.
- 9.19 The ES date back to 2008/2009 and there is no evidence submitted of a survey of breeding birds since. Local observations indicate that there are marsh harriers together with kites, buzzards and the occasional peregrine falcon on and around the site. There have been 3 totally inadequate Wintering Birds Surveys, 2 of which were said to be “snapshots” and one in February 2012 that was carried out when there were bird-scarers operating on the site. There appears to be no evidence of nocturnal surveys. This is

<sup>39</sup> CD A2 Vol. 2 page 100, paragraph 6.11.1.14, p 99-100 & CD A2 Vol. 3 Figure 6.8.

<sup>40</sup> CD A2 Volume 2 page 93 paragraph 6.10.2.1.

especially important to assess the potential impact on the golden plover, a regular site visitor, and bats. Bats can be found in all locations around the site, so it is likely that they forage both in and around the site. The Bat Conservation Trust (BCT) stresses it is imperative that harmful effects on bats and other wildlife are taken into account when siting wind turbines.

#### Flooding

- 9.20 The site is identified by the EA as being located within Flood Zone 3, the highest risk, and within 2 broad Flood Warning Areas<sup>41</sup>. Although the EA say they have no record of historical flooding in the area, after the heavy rains in 2007 nearby Habertoft, Sloothby and Willoughby experienced localised flooding. Since the site is shown to be at risk from groundwater flooding, the ES states that the excavation of foundations could have an effect on the watercourses. The Flood Risk Assessment is dated 2009 and is out of date. Filling the Marsh with concrete would increase the level of the water table, which could have devastating effects on the local community.

#### Construction Traffic

- 9.21 This is an issue of major concern for local communities. In addition to the movement of the turbine components and the huge cranes needed to erect them, Orby residents would have to endure over 12,000 HGV movements through the village. The ES indicates<sup>42</sup> that there would be some 842 loads of ready-mixed concrete from local batching plants, necessitating 10 days of intense activity. A huge quantity of crushed stone may be imported from a local quarry with HGV movements totalling 4,934; transporting geotextile materials would involve 83 movements and some 254 deliveries of plant and machinery are proposed. All of these would be one-way journeys.
- 9.22 The intensive vehicle movements would require alterations to the roads through Orby. The ES says, *"...whilst the villagers will notice a temporary increase in HGV traffic during the maximum 12 months construction phase, this increase is not expected to cause congestion or have a detrimental effect on highway safety, with the impact considered to be of low/negligible significance"*. OWAG disagrees; this statement is based on outdated traffic surveys undertaken in 2008/2009 and no consideration has been given to this being a main route for holiday traffic to the coast. Despite the increasing success of Fantasy Island (2 million visitors per year), Butlins, and the increased number of holiday caravans at Ingoldmells and Chapel St Leonards and the heavy use of local roads by agricultural traffic using the grain store during the harvest season, there have been no up-to-date surveys.
- 9.23 The effect of vehicle movements has been drastically underestimated and the ES conclusion should be treated with caution. There are occasions in the holiday season, February to November, when residents are unable to leave their property due to the constant stream of vehicles heading to and from the coast. Moreover, only some 30% of residents have the benefit of a footpath outside their homes; the rest exit straight onto the highway. Many residents

<sup>41</sup> CD A2, Volume 2, page 205, paragraph 9.7.1.6.

<sup>42</sup> CD A2, Volume 2, page 58, paragraph 5.9.1.18.

currently risk their lives on this potentially dangerous road when visiting friends, exercising, catching the school bus or when walking to Gunby to use the bus. Existing hazards would be exacerbated by construction traffic, particularly HGVs who pose the greatest risk.

#### Telecommunications

- 9.24 There is an implication that the turbines could adversely affect television, radio and potentially Wi-Fi signals. The ES indicates that the *"...BBC will undertake a more detailed survey once an application is submitted at which time they will be able to definitively quantify the number of properties affected"*. Given that the BBC website identified that the turbines could affect the reception at 201 homes, for whom there is no alternative off air service and up to 4,131 homes may be affected for whom there may be an alternative off air service it is not clear whether this survey has been done<sup>43</sup>.
- 9.25 The use of the word *"mitigation"* suggests that any adverse effects could be resolved through technical solutions to be agreed between the developer, the lpa and the relevant operators. However, for the residents, the thought of dealing with 3 different agencies and the type of mitigation concerns them. The ES states *"the developer can make arrangements for construction of a digital 'self-help transmitter' which would be constructed and operated on a private basis under licence if considered necessary"*<sup>44</sup>. OWAG is concerned that the appellant appears to be sweeping potential problems aside as a civil matter, which appears to directly conflict with the ES. OWAG refers to the Brent Knoll appeal decision which contained a reference to, *"Any interference with radio and TV signals could be satisfactorily remedied by technical measures secured by a condition if the proposal was otherwise acceptable"* (CD H33 paragraph 109). Moreover all associated costs should be met by the developer (or operator) during the lifetime of the development, taking into account any acknowledged developments in technology or delivery as these are recognised to be key to the sustainability of an area.

#### Noise

- 9.26 The WHO refers to UN Agenda 21, which states, *"When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking action should be taken to protect the public health without awaiting scientific proof. The full costs associated with noise pollution (including monitoring, management, lowering levels and supervision) should be met by those responsible for the source of the noise"*. The community is concerned about the cumulative effect of low and high frequency noise on neighbouring properties. OWAG endorse the evidence by Mrs Smith and MAS regarding the adverse impact of noise on the local community.

#### Benefits in the Planning Balance

- 9.27 Dr. J Constable, Director of the Renewable Energy Foundation, submitted a written statement on: the potential energy benefits; a quantification of a dis-

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<sup>43</sup> CD A2, Volume 2, page 260, paragraph 11.2.6.1.

<sup>44</sup> CD A2, Volume 2, page 260, paragraph 11.2.6.5

benefit not assessed by the ES and a quantification of the emissions savings delivered by the scheme with an estimate of their cost. Dr Constable provided his statement to OWAG and the inquiry, not as an objector but to provide factual evidence to inform the SoS. The assessment is based on the erection of nine 1.3MW turbines. Following the receipt of noise evidence, which used an 850KW turbine for the noise assessment<sup>45</sup>, Dr Constable submitted a note reducing his estimates downwards by 35%<sup>46</sup> (OWAG 8).

- 9.28 Nine turbines would have a total rated output of some 11.7MW. However, this figure is of no utility in estimating the value of the wind farm since wind is variable. The energy likely to be generated by a wind farm can only be estimated based on on-site wind speeds generally over a full year. No on-site wind speed data is available for Orby and the ES load factor of 25% is the mean of Lincolnshire wind farms and is the best estimate available to the Inquiry. On this basis, the wind farm output would be equivalent to the annual energy consumption of some 5,450 domestic households or equivalent to seven thousandths of 1% of the UK national demand for electrical energy (OWAG 6 paragraphs 16 to 19).
- 9.29 This calculation does not mean that 5,450 house could be taken off the grid because of the variability of wind power energy. The figure only gives some degree of insight into scale. An alternative is to view the wind farm's contribution in relation to the UK national target for renewable energy in 2020. The National Renewable Energy Plan 2009 says that electricity would provide some 117,000,000 MWhs of the national target (OWAG 6 Appendix 4). Orby would contribute 2-hundredths of 1% of the expected contribution of renewable electricity. Some 4,500 wind farms of this scale would be required to meet the 2020 target share for renewable electricity (OWAG 6 paragraphs 19 to 23).
- 9.30 In assessing a planning proposal all relevant negative impacts should be considered. One impact not described in an ES is the additional cost to the consumer. If constructed this wind farm would be supported by the Renewables Obligation, which provides income support to the operator drawn from consumer bills, over and above that obtained from the wholesale value of the electricity. The value of this support is estimated based on auction prices for Renewable Obligation Certificates, which, at the time the evidence was submitted, were equivalent to the wholesale price of electricity. The financial burden of this development to the consumer would be some £212 per household per annum and equal to a subsidy of some £25m or £5,000 per household over the life of the wind farm (OWAG 6 paragraph 28). This would be a negative impact suppressing activity in the natural economy.
- 9.31 It is assumed that wind farms would reduce emissions from the electricity generating system. However, there is growing concern that the net effect of managing wind power on the system degrades the efficiency of residual thermal plant increasing its emissions and eroding the net emissions savings of wind power plants. This technical discussion has not yet reached a firm

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<sup>45</sup> APP 11, Table 1 page 30

<sup>46</sup> Inspector's Note. On the basis that the SoCG refers to the candidate turbine being rated at 1.3MW, I have concentrated on reporting Dr. Constables estimates are based on a 1.3MW turbine.



conclusion, but there are reasonable grounds to doubt the savings assumed for most wind power proposals (OWAG 6 page 8 & Appendix 6).

- 9.32 The emissions savings of a wind power project are calculated by assuming that each MWh generated by the wind and integrated into the system displaces a MWh of energy from other sources; the ES works on this basis. Given that it is not certain which generation source would be displaced it is widely accepted that grid average emissions should be used. The ES suggests an emission factor of 0.43 tonnes of CO<sup>2</sup> per MWh giving savings of 275,450 tonnes over the 25 year life of the scheme, or 11,000 tonnes per year. System emission factors vary from year to year and in 2009 DEFRA reported that the 5-year rolling average emissions factor was 0.48 tonnes per MWh. This would yield a higher CO<sup>2</sup> emissions saving of 12,400 tonnes of per year (OWAG 6 Appendix 7).
- 9.33 Estimated emissions savings from one wind farm have to be viewed in context (OWAG 6 page 10). Using DEFRA figures for 2009, the emissions savings from Orby would be broadly equal to two thousandths of 1% of UK total emissions, or three thousandths of 1% of emissions resulting from UK produced goods and services from households. The cost of emissions savings is a relevant factor in evaluating their benefit. The subsidy cost per tonne of CO<sup>2</sup> abated would be some £105, currently 4 times DECC's central predicted price for carbon traded in 2020 (OWAG 6 paragraphs 40 to 43).

#### Conditions

- 9.34 Should the SoS grant the application OWAG ask that the following conditions to be imposed. Regarding possible television interference including radio and Wi-Fi the following is suggested:

*"No development should take place on site until a scheme to secure the investigation and alleviation of any electro-magnetic interference to TV, Radio and WI-FI caused by the operation of the turbines has been submitted to and approved by the local planning authority. In the event of any reported interference turbine rotation shall be immediately inhibited until a full investigation is conducted to the satisfaction of the LPA. If the cause of the interference is proven to be from the wind farm the developer shall either decommission the development or, since there is no existing alternative transmitter source the developer at its own cost shall design, build and maintain a new terrestrial repeater and transmitter service. This service shall operate for the life of the wind farm. The developer shall also cover the cost to re-align the residents' aerials to the new transmitter service and the realignment back to the relevant mast when the wind farm is decommissioned. There shall be no limitations with regards to time financial considerations."*

- 9.35 On highway safety, one concern relates to children walking through the village travelling to school by bus/taxi between 08:00 and 08:30 hours. The road is very narrow and only 30% of the village has the benefit of a footpath. OWAG propose a limit on working hours on site and for deliveries during the construction phase to between 08:30 and 17:00hrs. Monday to Friday and 08:00 and 13:00 Saturdays with no work or associated traffic movements on a Sunday or Bank or Public Holiday.

## **10. The Cases for Interested Persons**

- 10.1 Document 98 contains responses from interested persons received between December 2011 and September 2012. These objections raise the following concerns:
- a significant number of wind turbines have been erected and approved which result in unacceptable harm to the character and appearance of the area. The Orby turbines would add to this harm and unacceptably affect the landscape character of the area and the setting of the AONB;
  - there would be an unacceptable effect on wildlife;
  - there would be unacceptable effects on residents' living conditions in terms of visual impact and noise;
  - construction traffic would be excessive, dangerous and damage narrow rural roads;
  - turbines are inefficient and expensive, the contribution they would make to national renewable energy targets would be small and would not outweigh the harm caused. There are more cost effective and less environmentally damaging options available to obtain renewable energy.
- 10.2 ***The Right Honourable Sir Peter Tapsell M.P.*** made written representations on behalf of constituents who contacted him at the time of the application, when the appeal was first lodged and more recently in February 2014 (Doc 16). Sir Peter highlights the almost unanimous opposition of his constituents, the consistent opposition of the Parish, District and County Councils to wind energy proposals on this site and the perceived unfairness that the planning system has allowed the community to be subjected to 10 years of stress.
- 10.3 Sir Peter refers to Orby Marsh as a special place that has always been protected so that views to and from the AONB over the Outmarsh would be preserved. The constituency contains turbines that are dominant and intrusive and this scheme would exacerbate the harm to the character of the area and the setting of the AONB.
- 10.4 The turbines would have an adverse impact on residents through noise and on the tourist economy of the area. The lack of headroom between predicted noise levels and ETSU limits would be unacceptable and noise would have an unacceptable impact. Tourism is important locally and nationally and is a driver for economic growth. Most visitors come to enjoy the space, the beauty and openness of the landscape. Beach views at Skegness and along the coast have been spoiled by the offshore developments. Thus, it is critical that the Marshes between the coast and the AONB are afforded the highest degree of protection.
- 10.5 In terms of national energy targets, operational and consented schemes exceed what is required by 2020 and the Prime Minister has made clear that there is limited potential for further onshore wind developments. Therefore, for the scheme to be approved, it would need to be an exceptional site. Orby Marsh is a poor site where the harm outweighs any conceivable benefits.

- 10.6 In addition to reiterating the concerns raised by the Parish, District and County Councils and other concerned residents, **Mrs Smedley** raised specific concerns regarding the quantity and quality of the assessments of the effect of the scheme on bird life (Doc 24). The turbines could have a significant adverse effect on local bird life, which includes Lapwing, Golden Plover, Marsh Harrier, Red Kite, Falcon and Kestrel. The lengthy construction period and the groundwork needed to support the turbines would have a significant adverse effect on voles, rodents, snail, moths and butterflies, all of which play an important role in the local ecosystem.
- 10.7 **Mrs Rogers** supports the objections raised by others in relation to number of times wind turbines have been proposed on this site and refused, the inefficiency of turbines as a means of producing energy and the adverse impact on the local and wider landscape. In addition, she raised particular concerns regarding the adverse impact the turbines could have on the use of land at Ashley's Field to the north of Sloothby High Lane as a private landing strip (Doc 25). This field, located directly to the north of the site, has 2 grass strips one running north/south and the other running east/west and is used by the Rogers family and their guests.
- 10.8 **Mr Enderby**, Chairman of Hogsthorpe Parish Council also spoke on behalf of Ingoldmells, Orby, Anderby, Addlethorpe, Chapel St. Leonards, Mumby and Welton-le-Marsh Parish Councils (PC) and spoke to a proof of evidence submitted by OWAG and notes submitted during the first session in Hogsthorpe Village Hall (OWAG 4, Doc 26 & Doc 53).
- 10.9 There is insufficient evidence to justify further wind farm development in this area taking account the risks involved, damage to the economy, harm to the environment, harm to the quality of local life and the adverse visual impact. Given the objectives of the Localism Act 2011, the imposition of this wind farm on the locality would show that its words that it takes, *"...power from central government and hands it back to local authorities and communities giving them freedom and flexibility to achieve their own ambitions..."* are merely rhetoric. Permission would not only cause considerable distress but also completely undermine faith and confidence in the process. Moreover, permission would be contrary to statements by the Prime Minister and Deputy Prime Minister in April and February 2012 (OWAG 4 paragraphs 5.4 & 5.5).
- 10.10 The flat, rural Outmarsh with its long visual presence is an essential environmental corridor between the AONB and the coastal strip. The industrialisation of this area with more turbines, there are approximately 170 turbines in the pipeline in East Lindsey and the prospect of more turbines offshore, would completely change and adversely affect the character of the area spoiling established views and the setting of the landscape.
- 10.11 The turbines would be prominent from roads that provide the main access to the coastal tourist resorts. Tourism is the largest contributor to the local economy; Butlins alone has some 500,000 visitors per annum. However, tourism is fragile and there is precious little else to provide employment. A

- study<sup>47</sup> for the Scottish Government in 2011 reported that 3.7 jobs in the UK are lost for every one 1 wind produced job (Doc 47).
- 10.12 Safety and the impact of noise on the amenity and health of residents are major concerns. The Caithness Windfarm Information Forum has identified: blade failure, fire, structural failure and ice throw as major concerns and likely to impact on tourism and residents' daily lives. Ice throw has been reported at distances up to 140m and in Germany 880 icing issues were identified of which a third were in lowland/coastal areas. The Daily Telegraph reported that ReUK confirmed that there had been 1,500 wind turbine accidents and incidents between 2006 and 2011. Whilst most accidents and deaths relate to the industrial process, within the last 5 years in the UK more people have died or been injured as the result of wind turbine accidents than nuclear ones.
- 10.13 The turbines would be present for 25 years and people are concerned about the potential impact of infrasound on their health and the pollution effects from thousands of tons of concrete being prepared and poured onsite. There is worldwide evidence that infrasound can affect conditions such as high blood pressure, tinnitus and sleeplessness. One home in Lincolnshire has had to be abandoned because of the adverse impact of noise. Moreover, there is mounting evidence that turbines have an adverse effect on property values.
- 10.14 The PCs do not accept that this project represents no risk to wildlife, no noise hazard, no electromagnetic interference and no disruption to television signals. It is not acceptable to make promises relating to future action after installation. Such issues cannot be quantified or guarantees given and it would be left to the local community to bear the unacceptable risk.
- 10.15 **Mr Taylor** lives at and works from Rose Cottage, located to the west of the proposed turbines and was chosen as the family home for its stunning views and tranquillity (Doc 27). Although Rose Cottage is one of the nearest dwellings to turbines at some 900 to 1000m, the house was not shown on any of the application or appeal drawings with no explanation why. The only conclusion that can be drawn is that out-of-date maps were used so as to not draw attention to the proximity the house to the turbines.
- 10.16 Given the ES acknowledges that "*there will be significant visual effect looking east from the property*" this development conflicts with LP Policies A4 and A5. Whilst there are representations of various views from the surrounding area, there are no wirelines or PMs that show the visual impact of the turbines in relation Rose Cottage. However, the PM from VP 15 to the west shows the visual effect of the turbines at a distance of 2.7km, some 3 times the distance from Rose Cottage to the turbines and shows the significant adverse visual effect they would have on Rose Cottage.
- 10.17 The ES, pages 29 to 43, deals with the Planning Policy Context and mentions various Planning Policy Statements and LP policies, but crucially ignores the issues set out in Government policy at the time and LP Saved Policies A4 and A5. ES section 6.8.4 describes the Outmarsh and its landscape as "*not of*

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<sup>47</sup> The Economic Impact of Renewable Energy Policy in Scotland and the UK 2011 – Verso Economics

*high quality*" and questions the value of the landscape. The ES refers to the draft East Lindsey Landscape Character Assessment whereby "*views are open and expansive with big skies that meet level horizons... simple rural landscape with intensive agricultural fields...*" These 2 statements alone are why the Outmarsh has, and should be, protected. The assessment goes on to say that "*developments within the rural area should be sensitive to any small scale patterns and characteristic of the area.*" This development can in no way be considered small scale and characteristic of the area.

- 10.18 The ES landscape and visual impact assessment on pages 88 to 90 sets out the visual effects from 23 VPs. From VPs 3, 4, 13 and 15, where the separation to the turbines would range from 1.3 to 2.6km the effect on the landscape character would be significant. At 1.3km the, "*the observer would be in a landscape subject to the characterising effects of the wind farm*" and the effect would be "*Significant in visual and landscape character terms*". Rose Cottage is at best 300m closer. The conclusion of the landscape and visual assessment, page 98, concludes, "*assuming the construction of the proposed wind farm, significant visual effects would arise in the range, at most, considered to be up to circa 3km to 4km from the nearest turbines*". Again this ignores the fact that the gap to Rose Cottage is only about 1km where the visual effect would be severe and principally felt by local residents both in respect of the visual component of residential amenity and also in respect of their enjoyment of recreational amenity over local footpaths, bridleways and local roads and gardens.
- 10.19 For reasons that are not given in the ES, Spring Cottage was an agreed location for measuring BNLs. Spring Cottage is stated as one of the closest properties to the proposed development which is correct. However, test results displayed at the September 2009 public consultation showed that the residents of Rose Cottage would experience severe noise disruption. All reference to potential noise levels at Rose Cottage no longer seems to exist.
- 10.20 **Mr Groves** lives at Spring Cottage and BNL recording equipment was located in the field adjoining the house (Doc 28). He indicated that the equipment was placed close to a mature willow tree that was in leaf, which would have affected the accuracy of BNLs recorded. Mr Taylor said that he was never approached about locating the equipment in his garden, where it would have recorded more representative noise levels.
- 10.21 Spring Cottage has extensive open views, which are not, despite what the ES says<sup>48</sup>, obscured by large farm buildings. The turbines would have a significant visual effect that would adversely affect his enjoyment of the house and garden. The landscape of the area would be blighted by the erection of more turbines.
- 10.22 **Mrs Lingard** lives at Grainthorpe some 1,7km from the 20 turbine (89m to tip) wind farm at Conisholme (Doc 29). When this wind farm was proposed the community was assured that turbine noise would be imperceptible except in the most unfavourable climatic conditions. The reality is that she

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<sup>48</sup> Volume 4, Appendix 6-3, page 113.

experiences unacceptable levels of noise characterised as whooshing, thumping noises, the sound of a jet engine, a steam train, a rough sea and the worst of all a large helicopter hovering overhead. Not only can the noise be heard but it can also be "*felt in your head*". Mrs Lingard now understands that these noise effects are the result of wind shear and amplitude modulation and it affects her ability to sleep when the wind is in a certain direction. Some residents suffer from shadow flicker as well as noise. Residents of Grainthorpe are surrounded by wind farms and the residents of Orby would be similarly affected.

- 10.23 **B J Wright, Miss K V Wright, Mr W B Wattam** (Docs 30 & 31) reiterated concern regarding individual and cumulative landscape and visual impact, the likely adverse effects on ecology, highway safety and drainage and submit that the benefits of the scheme would not outweigh the harm.
- 10.24 **Mr Meffen** lives and has 2 holiday cottages at Habbertoft immediately to the west of the site (Doc 32). In addition to concern about the impact on the value and saleability of his property, he has concerns about the impact on the attractiveness of the area and his holiday cottages. His clients, who generally come from the urban areas of Nottingham and Sheffield for the tranquillity and attractiveness of the countryside, have said they would not choose to stay in his cottages if the turbines were erected. Mr Meffen has concerns about the impact of the turbines on horses stabled at Holme Farm. The movement of and noise from the turbines would unsettle the horses and make riding in the area dangerous.
- 10.25 **Mrs. P J Glanville** spoke on behalf of her mother, Mrs. J Fox-Robinson, and family who own Boothby Hall at Welton le Marsh, located some 2.5km to the west of the site (Doc 33). Boothby Hall has been in the family since 1740, and has long and deep associations with the community and extended family.
- 10.26 Boothby Hall is a Grade II Listed Building, comprising a 17<sup>th</sup> century timber framed house, with mid-18<sup>th</sup> and early 19<sup>th</sup> century additions. Its historic landscape includes a brick coach house and wash house, a lake, orchards, a modest park, surrounded by small fields and old woods carefully laid out in the early 19<sup>th</sup> century for recreation and sporting wildlife. This tranquil wooded assemblage is a rare example of a "gentry estate" surviving in an area of intensive farmland and is in stark contrast to the modern, mono-agricultural landscape that prevails in the Orby area. This remnant of a once larger estate is enjoyed by the local community as well as by riders, walkers and birdwatchers. Retaining a strong sense of place, its character is typical of houses deeper in the Wolds,. Despite the Hall's attributes, there appears to have been no full assessment of this significant heritage asset.
- 10.27 Boothby Hall stands on a modest elevation, an outlier on the edge of the Wolds, just outside the AONB, with long views, partly shielded within trees, in 3 directions. Towards Orby Bank, the most open aspect, the site drops steeply to the flat and largely treeless marshland with uninterrupted long views towards the site. Contrary to statements made by the appellant, from behind the Hall, the canopies of Fantasy Island on the coast can be seen.
- 10.28 The turbines would significantly impair the community's and families' quiet enjoyment of this unique setting. Other factors of concern are the short and

longer term impact of the turbine construction and maintenance traffic, potentially adding noise, dust and congestion to the local rural environment alongside significant disturbance to wildlife. No full wildlife assessment appears to have been made, but red kites, harriers and several kinds of owl nest in the immediate area.

- 10.29 This appeal is particularly significant in view of the recent announcement of the preferred location for the RWE substation, by the Skegness Stadium and the corn drier, both already prominent in the flat open marshland. The Stadium makes its presence felt when active at night, with glare from bright arc lights and the noise from the revving of fast cars travelling a long way across the open landscape.
- 10.30 If the scheme is allowed, this area on the Orby/Skegness border would become a semi-industrial concentration, with substantial service traffic. This outcome may make sense in pure planning terms; however its impact would be unpleasant for local people, compromising the quiet enjoyment of their homes. If permission is granted its impact should be mitigated with planting and other barriers.
- 10.31 **Dr J Yeadon** (Doc 34) highlights that Orby Marsh is one of the few remaining unspoilt, rural areas where people can live, retire and convalesce in peace and tranquillity. Not everyone can cope with the noise, stress and pollution of city life and industrialisation. Effectively, Orby Marsh is a conservation area for sensitive humans who cannot survive elsewhere. Both Dr. Yeadon and his wife are disabled, severely ill and class themselves as highly sensitive receptors. An industrial wind scale farm would make their lives unbearable.
- 10.32 The health repercussions of turbine noise are well documented. When sited near homes turbines have been reported to cause sleep disturbance, stress, nausea, malaise, headache and fatigue; precisely the symptoms he and his wife moved here to avoid and alleviate. The house is some 1.2km from the site on the side of the road, which is likely to be used by construction traffic. This road is unsuitable for HGVs and passing heavy vehicles already shake the house to the extent that damage has been caused and sleep is disturbed. Construction noise would be audible for miles around. The pollution, noise and stress of prolonged heavy construction could kill them.
- 10.33 This area is unique in being the only part of Lincolnshire, a county famous for its mostly flat and boring landscape, to have spectacular hilly views stretching for miles. Every point for miles around this area is within a few minutes' walk of a hilltop giving views of the sea, nature reserves and the AONB. Soon, all that would be seen from those hills is turbines. If more turbines are allowed to be built at a place as special, unspoilt, and close to an AONB as Orby, then nowhere is safe. Turbines are not a feature of the unspoilt countryside: they are part of a power station. Inevitably they bring with them other parts of that power station, e.g. substations, power lines, access roads. Once the area is no longer unspoilt, the community will have no strong arguments against planning applications to build anywhere nearby.
- 10.34 The proposed development would be visible and change the landscape from unspoilt farmland to a wind farm landscape. He and his wife thought they would be safe to move here, since it seemed to be unthinkable to build

massive industrial structures so close to the AONB. This is one of the few remaining unspoilt areas of rural countryside and, according to BBC, part of the only remaining 2% of dark skies in this country. The proposed turbines would destroy views both to and from the AONB which would affect tourism and bankrupt local businesses.

- 10.35 The Outmarsh area is unique; it has very fertile, flat farmland, framed by the beautiful Wolds at one side and the sea at the other. It is rich in wildlife, SSSIs, protected verges, rare species, archaeological sites, rambling routes and exceptional views. If wind power must be used, we should build it in sensible places; we cannot save the world by destroying it. This scheme would irrevocably change the character of the placid rural agricultural landscape and seriously damage the setting of, and views from the AONB.
- 10.36 The site is in a low-lying area of waterlogged marshland which is prone to flooding. Over the last few years most of the nearby fields flooded. Indeed, in the summer of 2012 almost all the crops failed to the extent that they were un-harvestable. The deep concrete foundations and hard standings, service roads capable of carrying construction traffic together with the associated cable trenches, would decrease the ability of the land to drain, causing further flooding, damage to homes and loss of crops.
- 10.37 While personal considerations are rarely considered as planning matters allowing this development would result in an interference with homes, family life and peaceful enjoyment of possessions, which would be a violation of human rights under Article 8, Article 14, and Article 1 of the First Protocol, of the European Convention on Human Rights.
- 10.38 **Mrs. G Watson**, lives at Marsh Farm, some 1.5km south-west of the nearest proposed turbine (Doc 35). The ES contains significant errors, which brings its reliability into question e.g. at Spring Cottage there are no barns on any elevation to obscure the view. At almost every property, where the effect is classified as "*significant*" it then goes on to say the effect "*would not be such when judged in the round*". Normally people look around them when out and about; their heads are not fixed purely in one direction. Wherever one looks, turbines would be seen.
- 10.39 In contravention of the Countryside and Rights of Way Act 2000 and Human Rights legislation, the appellant has ripped up ancient hedgerows and green lanes; ancient drover's tracks are now gated and locked. The ES states that there are no rights of way across the appellant's land in the vicinity of the wind farm. However, a map issued by LCC in March 2013 clearly shows a maintainable track marked in blue. This track also joins with a maintainable track from Marsh House Farm to the south of the site, known as Low Road.
- 10.40 Mrs Watson reiterated the concerns expressed by Mr Enderby regarding the likely adverse effect of the scheme on television and radio signals and flooding. Six new culverts, crossing the existing drains would increase the risk of flooding in their vicinity. There is the potential for contamination during the construction period when oils, diesel and other chemicals are stored on site along with sealed waste and foul drainage to be stored in a holding tank awaiting collection and disposal off site. The ES clearly states that contaminants have the potential to enter surface watercourses.



- 10.41 There is no evidence of a bat survey. Bats can be found in all locations right around the site, so it is highly likely that they forage both in and around the site. The Bat Conservation Trust (BCT) supports the development of sustainable energy but, in line with the Eurobats resolutions, stresses that it is imperative that the possible harmful effects on bats and other wildlife, both direct and indirect, are taken into account before deciding on the siting of wind turbines, large and small. The carbon foot print of this development would be enormous and would result in the loss of agricultural land needed to feed the nation. The benefits of this scheme do not outweigh all the disruption and harm.
- 10.42 **Mrs. M Cooper**, acting Chairman of Orby Parish Council (PC) spoke on behalf of the PC and on her own account (Doc 36). In 2011, following a survey with a return rate of 41% a Parish Plan was produced, which shows the concerns residents have about the traffic (Pages 9 & 12). Although many were in favour of some form of renewable energy, 82% of the returned surveys were opposed to wind farms, substations, pylons and underground cabling. Page 14 states that residents want to oppose any application for wind farms.
- 10.43 Recently, residents on the main road through Orby were asked to sign a petition against the proposed increase of traffic. Of the some 50 homes that would be directly affected by this traffic, only 2 did not sign. Submitted photographs show the damage heavy vehicles cause to verges along the C541. As there are no footpaths at either end of the village pedestrians have to use them. The increased traffic would make residents prisoners in their homes. Recently, a lorry hit a telegraph pole in the village and the Police closed the road as it caused a major safety hazard.
- 10.44 This is a rural community and they want it to stay that way. Without exception, residents bought their homes because they wanted to live in a rural location. The turbines would ruin the countryside and have a devastating effect on local the wildlife and residents.
- 10.45 Orby is situated close to the coast and the C541, which runs through the village, is used by many visitors to access Ingoldmells, Chapel St Leonards and Fantasy Island. Holiday makers not only come here for the coastal area, which is already blighted by these monstrosities, but also to enjoy the inland rural locations. Visitors to the area are already subjected to the view of dozens of turbines as they approach the coast, they should be spared from the same view inland. A trip into the countryside should mean exactly that, not a trip to see more turbines. Orby and the surrounding area is predominately farmland and should be allowed to stay that way. The village borders the AONB and the turbines would be an eyesore visible for miles, ruining, what is and should remain a wide open countryside landscape.
- 10.46 The Government implemented a Localism Act to allow residents to have a more powerful say in proposals that affected their communities. This community, expects that Act to be implemented against this proposal. Orby does not want this development, or anything like it, blighting its way of life. The residents chose to live in a rural community, not a dumping ground for any development put forward by one landowner who has no consideration for the village and its surroundings.

- 10.47 L Rodgers and Harry Rodgers** submit that the development of turbines appears to have played no part in mitigating the climatic conditions that saw the recent extensive flooding and damage along the south coast (Doc 37). Like others they express concern that this area is prone to flooding and the introduction of huge concrete foundations would increase the potential for flooding and reduce amount of land available for agriculture. Like others attention they draw attention to the inefficiency of turbines and the harm the development would cause to the scenic quality of the area.
- 10.48 **Cllr. H Newcombe**, District Councillor for Chapel St Leonards, Hogsthorpe, Anderby and Anderby Creek reiterated local concerns regarding adverse impacts on the rural landscape, the big skies and the unspoiled views all of which attract people to live in and visit the area.
- 10.49 **Cllr C Davie**, LCC Councillor for the Ingoldmells Rural Division, member of the LCC Executive Board with Executive responsibility for Economic Development, Environment, Strategic Planning and Tourism, a Board Member of the Greater Lincolnshire Local Enterprise Partnership (GLLEP), a Director of Investors in Lincoln, Deputy Chairman of The Strategic Transport Board for Lincolnshire, chair the Joint Advisory Committee of Gibraltar Point National Nature Reserve, member of Orby Parish Council, a charitable trustee of the Renewable Energy Foundation and a Deputy Chairman of the local Conservative Association, objects to the proposal (Doc 39).
- 10.50 For the last 14 years the community has lived with the threat of a large scale industrial development forced into their lives and their countryside. There is nothing fair about a planning system where a developer can try and rebadge himself as a green champion and wear down good people and communities for personal gain. There nothing fair about the hundreds of thousands of pounds of taxpayer's money expended by the Ipa, by LCC and residents who have worked tirelessly to protect this site from wrongful development, not just fearing but knowing the harm and damage this development would cause, not just locally, but far and wide.
- 10.51 The appellant has done nothing to address the concerns raised in the 2004 appeal and the community is faced with a smaller but no less harmful scheme. The proposal is more harmful, because of the existing offshore and onshore development built or approved since 2004 with more to come. From certain locations, turning through 270 degrees there are views of existing turbine or potential views of those waiting to be built. The only bit left unspoilt is the view around Orby Marsh with the AONB as its backdrop.
- 10.52 The cumulative effect of Orby Marsh with the existing on and offshore turbines and those that are consented but not built would be the total industrialisation of an entire area. Government policy does not support that happening and there is no overriding need for this development to meet some 2020 Target laid down in the Renewable Energy Roadmap. The local MP confirms this target has been met. The community agrees that we need to secure our energy future and a balanced energy mix where new generation from different sources is required but that does not override the need to preserve the landscape and the amenity of those living in it. Moreover, the Roadmap contains targets for differing technologies because there is an

understanding that grid balancing requires the need to prevent one intermittent technology from causing imbalance, to both the grid and the taxpayer. Clearly, too much of one technology is not a good thing.

- 10.53 LCC submits that the best way to deliver change in matters of energy consumption and energy production is to trust local people to do it. Here, where 50% of the population lives in fuel poverty the cost of delivering green technology falls on consumers who are least able to pay. It is ironic that the very technology that developers claim will deliver utopia is driving up prices for those already struggling to keep heat and light on. The subsidy regime, as the Prime Minister admits, is no longer justifiable at present rates. Subsidy has driven poor applications for development into the planning system, some that have caused real and lasting harm to landscapes and communities.
- 10.54 In views on a journey from Hagworthingham Top east towards the coast there are turbines. What is seen is a whole horizon of white ghostly machines standing tall and dominant in the late afternoon sun. Even though the turbines at Orby are only 81m high they would, from elevated viewpoints on the edge of the AONB, be dominant and would have a huge impact over a wide area, obliterating the quality and openness of the Outmarsh. These turbines would not sit lightly into the landscape; they would be a brutal intervention in a quiet rural setting, alien in the extreme. They would alter the character of the area so substantially that it would for many people become a considerably less pleasant place in which to live.
- 10.55 The Outmarsh is a flat open area. Tall, vertical structures would be visually dominant, over very long distances and together with existing turbines would have an adverse impact on the landscape would be adverse. The nearby C541 and A158 by-pass are main routes that carry thousands of visitors to the coast, every day during the holiday season. As you drive to the coast, either along the A158 from Lincoln, or down the A16 from Louth the viewer is conscious of these turbines in the landscape. Returning visitors comment on the aggressive industrial change forced on the area. Therefore, for visitors, and residents, the Orby Marsh turbines would have a severe and adverse visual effect. Visitor would no longer be arriving at a pristine coastal location for a holiday but at a coastline with turbines to the front and to the back of it.
- 10.56 A key strand of the economic strategy is to double the value of tourism over the next 20 years. Currently, coastal tourism is worth some £500 million per annum to Lincolnshire. The traditional visitor base is the industrial heartlands of South Yorkshire and the Midlands. This coastline must offer an alternative landscape to the industrial ones our main visitor cohort originates from. If it cannot do that then we will have major implications for our entire growth strategy in the tourism sector. Developers used to peddle the myth that visitors were lining up around the block to visit wind farms. That claim seems to have become silent in recent years. Visitors to Lincolnshire expect a high quality visitor experience, they want to walk and cycle and ride through unspoilt countryside and this landscape represents our tranquil, rural space between the AONB, which is one of only 2 highly designated landscapes in the entire region and our now very industrialised coast. The open Outmarsh has been protected in the development plan for many decades. The area is even more worthy of protection today, than it has ever been.

- 10.57 The Government is clear that communities should not have development forced upon them. Communities must have their voices heard and be allowed to shape the places in which they live and work. Over the last 14 years there has been a totally consistent approach to wind energy development on this site from the lpa, LCC, PCs and the community. No one wants this development to proceed in this location; there is no community gain from it.
- 10.58 **Mr Smithson** drew attention to the prominence of the offshore turbines and the tranquil rural nature of the area alive with a variety of birdlife (Doc 40). Allowing this development would open the floodgates for more at a time when the Government is saying the way forward to develop offshore. Whilst the turbines would benefit the landowner, the community would suffer noise, a reduction in property value and the daily view constantly moving blades.
- 10.59 **The Marsh Windfarm Action Group** (MWAG) was formed in response to the number of planning applications for turbines being submitted to ELDC and a concern regarding the proliferation of turbines across the whole area including in the AONB, the combined total of which is in excess of 100 turbines (Doc 41). Communities are feeling overwhelmed by the potential adverse residential and cumulative visual impacts on their communities. The concern is that the pastoral, rural landscape character with its big open was in the process of changing to one where the over-riding feature would be large scale turbines.
- 10.60 MWAG is not opposed to renewable energy generation. It supports the broad consensus that there is a need for renewable power generation from a range of technologies and would welcome more research and development on efficient technologies that have less of a cumulative visual landscape character impact in sensitive rural locations. MWAG point to the increase in solar energy parks being commissioned in this relatively flat marsh landscape, which are far less intrusive.
- 10.61 MWAG notes the Ministerial Statement (10 Oct 2013), where reference is made the fact that "*Planning works best when communities themselves have the opportunity to influence the decisions that affect their lives*". MWAG notes the Framework and other guidance where the importance of landscape and visual impacts is stressed, guidance that affirms the lpa's decision to refuse permission. National guidance stresses that it is important that the planning concerns of local communities are properly heard in matters that directly affect the general public and that that cumulative impacts require particular attention. Here, taking account of both offshore and onshore turbines, the appellant has failed to adequately assess the true cumulative landscape character impact both in terms of other schemes in the vicinity and the wider issue of the landscape's ability, to absorb the incremental change towards creating a wind turbine landscape.
- 10.62 MWAG supports and fully endorses the evidence of the lpa, LCC and OWAG as being well founded and credible. The appellant's landscape and visual impact evidence is unconvincing and unrepresentative. Local communities cannot identify with or accept the appellant's assertions, that the magnitude of change to local landscape character and therefore visual impact, is assessed at no more than 1.6km and by definition, that there is insignificant

cumulative visual and landscape character impacts on the AONB, the surrounding Marsh landscape and seascape arising from the combined onshore and offshore turbines. The comment by the Planning Minister about wind farms being in the wrong place is particularly salient when he said: *"We put certain projects in the wrong place. Some planners have been too insensitive to the impact on the landscape and it has turned public opinion against the wider renewable agenda. We are very clear about the need to limit the impact on the countryside and landscape. It is quite clear the expansion of the on-shore wind rush is over."* Although these statements and announcements come after many insensitively-located wind farms and turbines have been approved and built, the candid realisation of the adverse landscape and visual effects of inappropriately sized and sited on shore wind turbines is very much welcomed. These recent Ministerial Statements and less formal comments together with the latest guidance re-enforce the case for rejection of the appeal.

- 10.63 MWAG fully endorses the lpa's landscape and visual impact evidence set out in LPA 2 paragraphs 3.5, 3.6, 3.11, 4.5, 5.1, 5.2, 6.8, 6.31 and 7.11. Similarly, LCC's landscape and visual impact evidence set out at LCC 2 paragraphs 5.4.2, 5.4.3, 7.6.1 and 7.6.2. The lpa's additional viewpoints present a better representation than those in the ES, even taking account of the prior agreement with the lpa and the subsequent preparation of the SoCG (LPA 4). The appellant's VPs do not provide a robust landscape and visual assessment in the round. Continuous and in places panoramic views of towards the Orby and Croft sites are obtained, when travelling along the A158, from west to east, i.e. travelling towards and facing towards Croft, Orby and the Outmarsh, from Horncastle to the Gunby roundabout junction, with the A158 & A1028. The Gunby roundabout marks the furthest south eastern location of the AONB; the church yard at Scremby is another of these views. On the high ground from within the AONB, especially when approaching the village of Hagworthingham, up and along this hill. This is most apparent in good visibility, particularly when the sun is moving over towards the west and shining eastward. This brings into view the vast array of offshore turbines, often shining a bright reflective white, with the top of the towers and all their blades highly visible, plus the 2 turbines at Croft, are in full view, with their towers and blades.
- 10.64 From the Hagworthingham VP in particular, it has been acknowledged that the Orby turbines would also be visible amongst the offshore turbines to centre and towards the left of the vista. The A158 appears to dissect the centre of this panoramic view. It is anticipated that the proposed Bank House Farm turbines, would be clearly visible, again mixed in with the offshore arrays of turbines, moving towards the right of the vista, (to the right of the A158) and appearing on the far right of this continuous row, will in effect be acting as book ends at one end of the row and the Lincolnshire Poacher turbine the other.
- 10.65 The cumulative visual impact of the substantial offshore arrays visible along the high ridge and indeed the landscape and sky line horizon, appear as a significant barrier and forms a recent industrial imposition, denigrating the previously unspoilt vistas, which have existed for centuries on this highly valued and key characteristic of the AONB landscape. One could even

challenge the validity and acceptability of this unforeseen outcome when considered in context to the CROW Act and the European Landscape Charter. Even when visibility is lower from this and other numerous VPs along this major artery road linking Lincoln to the coast, which carries thousands of local and visitor tourist traffic throughout the year, the Croft turbines are highly visible and therefore would combine at various points with the 9 Orby Marsh turbines, plus the 2 Croft turbines in addition to the 6 Bank House Farm turbines. This combined effect would reveal 2 separate large prominent clusters of 9 and 8 turbines respectively. The offshore turbines also pop in and out of the view, when travelling east along this major route to the coast from Horncastle.

- 10.66 There is a significant PROW view point obtained from the high AONB landscape north-west of Hagworthingham, at Hoe Hill located between Greetham and Fulletby. The significant importance of Hoe Hill at 127m high is that this premier location is even highlighted in NCA 43 Lincolnshire Wolds, 'Landscape through time'. (LCC 3 Appendix 2.2 page 6 page). The picture in NCA 43 is taken is looking east over Hoe Hill, with the sweeping panoramic horizon in clear view, as a back drop. This is a popular and publicised tourist and local recreational walk. The large contingent of walkers shown confirms this in the representative picture. The picture is taken just east of Furlongs Lane, further along the footpath/bridleway. These are examples of one of the many walks around this area, which attract tourist from all over the UK and abroad. From this view point the whole of the horizon in clear visibility this is now significantly impacted by the offshore arrays in full view. The 2 turbines at Croft are also prominent in the view.
- 10.67 Without exception all of the Cumulative ZVI figures clearly demonstrate the existing and potential cumulative visual impact penetration from unobstructed views, deep into the AONB, especially from the Wolds landscape viewed over and in the vicinity of Hoe Hill. These visualisation are material and have been available to the appellant, as they form part of previously submitted planning applications documents.
- 10.68 As to the 2 turbines at Croft, had the Inspector<sup>49</sup> been fully aware of the pending major visual impact, of these turbines over the low lying Marsh Landscape and into the AONB, approval, may not have been so readily forthcoming. The Inspector's assessment, in 2005 was reliant on the developer's ZVI's and landscape assessment assertions, which he seems to have followed and based on what now appears to be his own subjective opinion of the value of the Outmarsh landscape character, describing it as "*monotonous*". It appears the Inspector made his decision on the basis of the assumption, repeated several times, that merely just because the Wolds are 5km distance from the Croft turbines and they might be seen, there would be no visual impact and therefore no damage. There is serious concern that this opinion will be transposed into the Orby appeal. The fact that the turbines at Croft are constructed and on open display, proves beyond all doubt that this assumption was unrepresentative of the reality of the impacts from these 2 turbines alone. Added to this the offshore turbines, plus Orby and potentially

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<sup>49</sup> APP/D2510/A/04/1155199

Bank House Farm, the cumulative wind farm landscape character and visual impact tipping point is reached. The fact that the Croft turbines and the offshore turbines are built must be used as the base line.

- 10.69 The position before the SoS is that throughout the whole length of the marsh landscape character areas, there is a uniform concerted drive by a succession of developers, from the northern boundary of ELDC down to the southern area at Croft, through an incremental approach, to degrade this low lying predominantly flat sensitive landscape into an wind farm landscape, with impacts arising along its entire length, both onshore and offshore. Sequentially each developer is seeking to present their application in its own best possible light, with consistent assertions that the impacts on each proposal are minimal, local and merely limited to, i.e. an inconsequential distance of between 500m and 1.6km. At the recent Louth Canal appeal, the appellant's landscape witness even went so far as to state that "*breathing spaces*" should be avoided, it was better just to extend existing and once approved, consented schemes.
- 10.70 Not content with degrading the big skies and wide open spaces of this Mash landscape these impacts are now seriously impacting on one of the key characteristics of the AONB, enshrined in its designation. If all the schemes currently in planning are approved a key aspect the AONB designation would be significantly undermined. Indeed, there is a serious and credible threat that if the AONB is stripped of this key characteristic, its designation will eventually be challenged, as it will of little value, effectively it will amount to nothing more than a worthless historical document, reflecting a bygone age.
- 10.71 **Mr. R Watson** reiterated the submissions of others regarding the adverse visual impact the turbines would have on the landscape, residents living conditions and highway safety (Doc 42). He understood that Lincolnshire Police are opposed to the access to the site via this road (C541). Recently, Boulevard Care in Orby have been given consent to increase their building by approximately 50%, and will have residential patients who will not have a footpath to leave the site safely.
- 10.72 **Mrs Whitham** lives directly to the west of the site (Doc 43). She like many others drew attention to the adverse effect the scheme would have on the striking rural landscape, views of the AONB and the agricultural and ecological value of the site.

## **11. Conditions & S106 Agreement**

- 11.1 Document 64 contains the non-noise related Suggested Conditions (SC) and Documents 65 and 86 contains the SCs relating to noise matters.

### Non-Noise Conditions

- 11.2 Given longer lead-in times associated with wind farm schemes in terms of obtaining approval of conditions precedent, sourcing the turbines and agreeing a grid connection, SC 1 seeks to increase the period for implementation of the permission from the standard 3 years to 5 years. The appellant points to the recent Turncole Farm decision where a 5-year time limit was imposed (Doc 48 Annex B). The Ipa favours the retention of the 3-year period to reduce the period of uncertainty to a minimum and to reflect submissions regarding the urgency of the need for renewable energy.
- 11.3 SC 2 provides for the development to have a lifespan of 25-year from the date of the first export of electricity to the grid. SCs 3 and 4 provide for removal of the turbines and restoration of the site after the 25 years or if any turbine fails to generate electricity for a continuous period of 6 months. SCs 5 to 9 relate to the appearance of the development. SCs 5 and 6 control the height, rotation and appearance of the turbines with height to blade tip limited to 81m with the hub height limited to between 50 and 60m. SC 7 requires details of the external appearance, layout and ancillary details of the on-site substation to be submitted for approval. SC 8 provides for all cabling between the turbines and the on-site substation to be installed underground. SC 9 limits permanent illumination on the site to that necessary for safe access. In the interests of aircraft safety, SC 10 provides for the prior approval and installation of infra-red aviation obstruction lighting.
- 11.4 In the interests of highway safety, SC 11 provides for the submission of a Transport Plan relating to lorry routing, management of deliveries and details of temporary and permanent works in the public highway. SCs 12 and 13 are suggested to protect residential amenity. SC 12 provides for the submission of a detailed Construction Method Statement (CMS). SC 13 relates to hours of construction, which the appellant proposes as 07:00 to 19:00 hours Mondays to Fridays, 08:00 to 13:00 hours on Saturdays with no working on Sundays and public holidays. The appellant submits that this reflects standard industrial practice and would be consistent with other permitted schemes. OWAG would prefer 08:30 to 17:00 hours Mondays to Fridays and 08:00 to 12:00 hours on Saturdays. The later start on weekdays is suggested to avoid conflict with children waiting for school buses, particularly in the darker winter months, in areas where there are no or limited footpaths. The appellant indicated that the routing and timing of delivery vehicles would be more appropriately controlled under the terms of SC 11, rather than placing a blanket restriction on construction hours.
- 11.5 SC 14 provides for the implementation of a programme of archaeological investigations. SC 15 provides for the submission of a scheme to investigate and mitigate of electro-magnetic interference with terrestrial television reception. LCC submits that this should be a pre-commencement condition and extended to include any electro-magnetic or physical interference with internet transmitters and signals. OWAG suggest that the condition is



extended to include radio transmissions. The appellant submits that as potential problems with interference would occur at the construction stage there is no need to delay commencement, draws attention to the lack of objection from any of the telecommunications operators or the internet provider (Docs 44 & 56). SC 16 provides for the implementation of a programme of flood mitigation measures.

- 11.6 SC 17 provides for a pre-construction survey for the presence of water voles and a programme of mitigation measures if required. SC 18 provides for post construction monitoring of the potential impact of the scheme on birds and bats for a period of 1 year. SC 19 provides for a micro-siting allowance and specifies the approved plans.

Noise Conditions<sup>50</sup> (Docs 65 & 86)

- 11.7 SC 20 relates to operational noise and set the noise immission levels at various properties in the area during the daytime hours of 07:00 and 23:00 hours and night time hours of 23:00 to 07:00 hours. SC 21 is a pre-commencement condition requiring the submission of a scheme to provide a mechanism for the assessment and regulation of amplitude modulation.

S106 Unilateral Undertaking

- 11.8 Referring to the House of Commons Standard Note SN/SC/4370 Planning for Onshore Wind Farms (Doc 85) and the DECC publication Community Benefits from Onshore Wind Developments, the appellant has indicated that if planning permission is granted he will make available, by way of a S106 Unilateral Undertaking (UU), a Community Benefits Package (Doc 89).
- 11.9 The benefits package would comprise: (i) a one off payment of £10,000 to the Friends of Burgh-le-Marsh Windmill to be applied towards the preservation of Dobson's Mill; and (ii) during the operational lifetime of the wind farm make an annual payment of £10,000 (index linked) to be used for environmental, socio-economic and educational purposes within a 3 mile radius of the appeal site; and (iii) set up a local electricity discount scheme pursuant to which a sum equivalent to 1% of the annual gross revenue of the wind farm would be made available every year during its operational life. Payments from the discount scheme would be made to the occupiers of properties within a 1.5 mile radius of the appeal site at the date on which planning permission is granted providing an annual discount in respect of the electricity bills of those occupiers. This particular element of the benefits package is similar to a scheme established in connection with the operational Bagmoor onshore wind farm near Scunthorpe.
- 11.10 The appellant accepts that the draft UU is not a material consideration that the SoS can attach weight to in the planning balance. However, he is keen to make the parties aware of his intentions. The Ipa, LCC and OWAG agree that the SoS can attach no weight to the draft UU in the planning balance (Docs 90, 91 & 92).

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<sup>50</sup> The single condition in Document 65 has been renumbered as SC 20 and the single condition in Document 86 has been renumbered as SC 21.

## **12. Conclusions**

The numbers in [ ] brackets refer to earlier paragraphs in this report or relevant documents.

### **Main Considerations**

12.1 These are:

- landscape and public visual impacts;
- the effect on living conditions with particular reference to visual impact and noise;
- the effect on tourism;
- other matters raised;
- planning and other policy;
- the planning balance

12.2 Before dealing with the above considerations, it is necessary to explain my use of the photographs of the existing landscape context, the photomontages and wireframe drawings contained within the ES and those provided as part of the cases for the lpa and appellant have played in my consideration of and conclusions on this scheme. In using this material, I was conscious of the advice contained in the 3<sup>rd</sup> Edition of the GLVIA [CD G14] and several other Core Documents, which highlight the technical limitations of visualisations. In particular, visualisations cannot capture the dynamic nature of wind turbines and the “drawing of the eye” to the rotation of the blades.

12.3 The ES photographs, whilst taken from locations that I consider are representative of potential views they were taken in poor light and have low levels of colour and contrast [CD A2 Volume 3]. In some of the PMs, the proposed turbines are not shown clearly and existing turbines readily apparent in good light are barely discernible. Accordingly, I have used the ES photomontages only as an aide memoir to inform my site visits and my appraisal of the merits of the scheme.

### **Landscape and Visual Impact**

12.4 The Framework’s Core Principles, paragraph 17, say that planning decisions should recognise the intrinsic character and beauty of the countryside and Framework paragraph 109 seeks to ensure that development should contribute to conserving and enhancing the natural environment by protecting and enhancing valued landscapes. Some 4km to the west is the southern tip of the Lincolnshire Wolds AONB. The primary purpose of this designation is to conserve and enhance the natural beauty of the area. The Framework indicates that AONBs have the highest status of protection in relation to landscape and scenic beauty.

12.5 Framework paragraph 3 indicates that NPSs are part of national planning policy and are a material consideration. In this case, as Footnote 17 to Framework paragraph 97 confirms, the relevant NPSs are EN-1 and EN-3

[CDs D2 & D3]. In terms of landscape and visual impact, EN-3 recognises that modern onshore wind farms comprise large structures and there will always be significant landscape and visual effects for several kilometres. In relation to AONBs, paragraph 5.9.12 of EN-1 cautions that, whilst the duty to have regard to the purposes of its designation applies, when considering applications for projects outside an AONB which might have impacts within it, the fact that a project would be visible from within the AONB should not, in itself, be a reason for refusing consent.

- 12.6 Although the submissions made by interested persons reflect the value they attach to the local landscape and its preservation, the landscape around Orby Marsh is not the subject of any statutory landscape designation or emerging development plan landscape designation. In this context, the appellant made submissions on the nature of the statement at Framework paragraph 109 and the relevance of the words "valued landscape" [5.9 & 5.10]. The Framework is to be read as a whole and paragraph 17 refers to, "*recognising the intrinsic character and beauty of the countryside*". Consistent with paragraph 17, paragraph 109 starts by reiterating the general objective of enhancing the natural and local environment, which, for the purposes of this decision, I take to mean, the countryside in general. Thus, leading on from this and the reference in paragraph 17, the appellant's interpretation of "valued landscapes" would be consistent with the reference contained at paragraph 5.9.12 of EN-1 regarding development outside the boundaries of designated areas. I agree with the appellant that as all landscapes are valued by someone at some time, the words "valued landscape" must mean something more than just the countryside in general.
- 12.7 The site is located within NCA 42 – Lincolnshire Coast and Marshes [LCC Appendix 2]. In terms of key characteristics, this NCA is described as a flat coastal plain to the east, predominantly open, a medium scale agricultural landscape rising gradually in the west to more undulating land at the foot of the AONB. To the west is NCA 43 – Lincolnshire Wolds of which a key characteristic is the pronounced scarp edge to the north and west which affords panoramic views across surrounding land. One of the special qualities of the AONB and listed as being important to its natural beauty is the availability of expansive sweeping views from the scarp edge [LPA 7 Appendix 3 Table 1; LPA 4 VPs A & B].
- 12.8 NCA 42 is divided up into 3 local landscape character areas running broadly north-south and parallel to the AONB [3.4 & CD F5]. The western area is LCA I1 – the Middlemarsh, which form the gently undulating foothills of the AONB and contains scattered blocks of woodland particularly frequent around the southern western boundary. What LPA VPs A and B photographs also show is the pronounced edge of the AONB to the west. The overall landscape sensitivity of LCA I1 is considered to be moderate to high.
- 12.9 To the east is LCA J1, the Outmarsh, an extensive area of gently undulating coastal plain. A key characteristic of the Outmarsh is "*some wide open views and big skies*" and VPs 3, 4 and 23 capture the characteristic openness [CD A2 Volume 3]. It struck me that the qualification of "some" in the above quote understates the openness of the area. The Outmarsh is described as, "*a predominantly intact and distinctive rural landscape with some man-made*

*influences... including several wind farms".* The overall landscape sensitivity of the Outmarsh is considered to be moderate to high but lower in areas influenced by localised industrial and urban areas. In this context, the locally prominent Skegness Stadium and the Grain Store to the south of the C541 lower the sensitivity of the Orby Marsh area.

- 12.10 To the east, is LCA K1, which although described as The Naturalistic Coast, the area of coastline nearest the site is almost exclusively urbanised, from Chapel St. Leonards in the north through Ingoldmells to Skegness in the south. Much of this urban development is tourist related developments of which Fantasy Island and the Butlins Skyline Pavilion are prominent features. The remainder comprises large swathes of touring and static caravan sites that are for the most part screened from long distance views. Given their proximity to the coast and their height and extent, the landscape of the coast and to a lesser extent the Outmarsh is influenced by the presence of 129 offshore turbines. These turbines have tip heights of between 134m and 160m and are located between 5km and 12km offshore and extend for some 13 to 14km from north of Chapel St Leonards to Skegness. Having heard the lpa's evidence regarding the zones of influence of the various individual turbine groups, I had the opportunity during the inquiry to assess the impact of the offshore turbines from various points on the coast and in the Outmarsh. Whilst I agree there is some impact on the landscape, I consider the zone of influence, even during periods of excellent visibility, does not extend as far as Orby Marsh (6.13; LPA 4 Figure PRV 2).
- 12.11 The appeal site is located within the Outmarsh and is typical of the landscape character of this LCA. Generally, it is a simple and rural landscape with large, intensively-used agricultural fields. Given the extent of this LCA, which stretches for almost 30km from north to south and my tours around the area, I struggle applying the LCA description of "*a predominantly intact and distinctive rural landscape*" to the area around Orby Marsh. The reference to "intact" suggests that the elements that underpinned its character are retained and are in good condition. There has been extensive drainage works and the removal of hedgerows to amalgamate fields to allow high intensity arable farming to be undertaken across a wide area. There is limited woodland and, where retained, hedgerow cover is sparse and in places has gaps of varying length either left open or replaced with post and wire fencing. In addition, to the south of the C541 are the prominent structures of Skegness Stadium and the grain store. Given its scale and nature, Skegness Stadium is a particularly incongruous and prominent feature. Thus, in terms of distinctiveness, the Orby Marsh landscape reflects its role as part of high intensity agricultural industry and is not special or unique in the context of this extensive LCA. In my view, the local landscape quality can be described as medium.
- 12.12 The turbines would be grouped in an east to west formation of 3 rows with generally even spacing between them. This layout results in a compact and balanced composition. Whilst the site and its surroundings are typical of the almost flat landscape of the Outmarsh and the Figures for the Zones of Theoretical Visibility, which are drawn on a bare earth basis, indicate that the turbines would be visible over a wide area, the reality is somewhat different. As several of the PMs show, the tree and woodland planting within the AONB

and its fringes to the east would effectively screen many views of the turbines [LPA 4 VP C]. Moreover, I was conscious that although the Outmarsh is relatively flat, its gentle undulations, scattered blocks of planting and hedgerows screened long distance views of existing wind farm developments at Bambers, Mablethorpe [5.86].

- 12.13 The lpa and LCC do not object to the turbines in relation to their potential solus landscape or visual impact, rather their concerns relate to cumulative landscape and visual impact [5.85 6.2 & 7.11]. Given the wide open views and big skies that are characteristic of this area, the compact nature and composition of the turbines and their height at some 81m to blade tip, the area where the turbines would be the defining element in the landscape and the landscape and visual impact would be significant i.e. where a "Wind Farm Landscape" would be created would not extend beyond the 500m suggested by the appellant [5.125; APP 2 Table 5.1]. Beyond this the area where a "Landscape with Wind Farms Sub-Type" would be created and the turbines would continue to exert a significant influence would extend up to 1 to 1.5 km. Beyond the solus landscape and visual impacts would decrease with distance [5.125, CD A2 Volume 4 VPs 4, 13 & 19]. Thus, given the medium quality of the landscape, the openness of the area, the presence of the "big skies" whilst the impact on landscape character receptors would be high, the spatial extent of a significant landscape and visual impact would be limited resulting in moderate harm [5.126]. My conclusion on the ability of the open and big sky landscape to absorb the limited solus landscape and visual impact in terms of the scale and extent of a wind farm landscape is confirmed by my observations of the Bambers Wind Farm, where the turbines are of a broadly similar height (87m to tip) as the Orby turbines [CD A2 Volume 3 VP 18].
- 12.14 The site is not within the AONB and as such the turbines would not have a direct physical effect on it. Here, given the number and height of the turbines, the compact composition and the degree of separation to the AONB, I consider the turbines, on their own, would not materially harm the landscape and enjoyment of the AONB.
- 12.15 In coming to the above conclusion on the solus impact of this scheme, I have had in mind the conclusions of the Inspector in the 2004 appeal, where effectively, given the absence of other turbines other than 2 at Bambers, she was assessing solus landscape and visual impact (CD H19). However, I consider the 2004 scheme with more than double the number of turbines (20), their height which would have been some 25% taller (101m to blade tip) is materially different to the current proposal. Notwithstanding these substantial material differences, I note that my colleague when considering a substantially larger scheme came to a similar conclusion that turbines at Orby Marsh would not materially harm the landscape or enjoyment of the AONB [CD H19 paragraphs 23 & 24].
- 12.16 PPG provides advice on assessing cumulative landscape impacts and cumulative visual impacts. Cumulative landscape impacts are the effects of the turbines on the fabric, character and quality of the landscape and the degree to which they would become a significant or defining characteristic of the landscape. This is broadly similar to the assessments carried out by the appellant, the lpa and LCC. Cumulative visual impact is the degree to which

the turbines would become a feature in particular views or sequences of views, and the impact this would have on people experiencing those views. Cumulative visual impacts may arise where 2 or more wind energy developments would be visible from the same point, or would be visible shortly after each other along the same journey. PPG highlights that just because no other sites would be visible from the turbine site, it should not be assumed that the proposal would not create any cumulative impacts.

- 12.17 With the existing turbines, those permitted but not yet built and those in the planning process this part of the Lincolnshire coastal plain has 3 distinct groups of turbines. In the north, there are the existing turbines at Conisholme, The Limes and Bambers and the permitted turbines at Gayton le Marsh and several others in planning. To the south are existing turbines at Croft, the permitted scheme at Windy Ridge and proposed turbines at Middlemarch, Bank House Farm, Sea Lane, and Pinchbeck Farm. Between these 2 groups is the extensive group of 129 offshore turbines stretching from Chapel St Leonards to Skegness and the operational Lincolnshire Poacher single onshore turbine [APP 3 Appendices 3 & 4, LPA 4 Figure PVR 2]. In between these 2 groups of onshore turbines and parallel to the offshore turbines would be the Orby Marsh turbines.
- 12.18 Looking at the above groupings of turbines, I can understand that, on face value, some may interpret this as a landscape that is cluttered by turbines and that a tipping point has been reached where the accumulation of turbines would be such that its landscape character has changed and turbines have become the defining characteristic of the landscape i.e. a Wind Farm Landscape has been created. However, from my extensive tours around the area, and careful examination of the PMs and wireframes, I am of the firm opinion that this stage has not yet been reached. Given the degree of separation between individual turbine developments, the degree of separation between the groups and the open and big sky landscape, I consider that the existing turbines have been absorbed into the landscape. The key landscape characteristic of the coastal plain, openness, and particularly the availability "*some wide open views and big skies*" are retained and the coastal plain can still be described as a Landscape with Wind Farms [5.130].
- 12.19 For the same reasons that the existing turbines have not materially altered the landscape character of the wider area, the introduction of the compact group of turbines at Orby Marsh would not result in a major or unacceptable cumulative change to the landscape quality and character of the Outmarsh LCA and beyond. The area would still be a Landscape with Wind Farms. Whilst the observer would see a wind farm in the landscape or in some places see more than one the turbines would not, despite their height and the movement of the blades, be the dominant or defining feature of the landscape. In my view, this is completely different from what the lpa suggest when it says that, "*the whole of the marsh character would become a "landscape with a wind farm sub-type"*" [6.27]. This suggests that the substantial extent of the Outmarsh LCA, which stretches some 30km north to south, would have its landscape character materially changed to something where views of turbines are the defining feature. For the reasons set out above I do not agree. Whilst there would be a significant change in landscape character, it would not be unacceptably adverse. This conclusion is

demonstrated in the PMs prepared by the appellant based on the lpa's VPs A, B and C [APP 6].

- 12.20 One of the key concerns is the potential adverse cumulative visual impact of the turbines when seen in the same view as the offshore turbines particularly from vantage points and recreational routes on the eastern edge of the AONB. At this point, it is worth reminding ourselves of 3 things: (1) the duty to conserve and enhance the natural beauty of the AONB and that one of its special qualities listed as being important to its natural beauty is the availability of expansive sweeping views from the scarp edge; (2) the advice at paragraph 5.9.12 of NPS EN -1 that whilst the duty to have regard to the purpose of the AONB applies when considering applications for projects outside it which might have impacts within it applies, the fact that a project would be visible from within the AONB should not, in itself be a reason for refusing consent and (3) PPG, which says that cumulative visual impact is the degree to which the turbines would become a feature in particular views or sequences of views, and the impact this would have on people experiencing those views.
- 12.21 In terms of cumulative impact and national policy/PPG guidance, the 2 appeal decisions referred to by LCC do not, in my view, take the issue of cumulative impact much further [7.13]. The comment in the Treading decision appears to me to do no more than restate the thrust of policy guidance at that time [CD H70 paragraph 19]. Similarly, the Inspector's comment in the Nun Wood case, in my view, reflects the guidance in NPS EN-3 that modern onshore wind farms comprise large structures and there will always be significant landscape and visual effects for several kilometres [CD H70 paragraph 263]. However, I do not agree that PPG advice<sup>51</sup> says or implies that such cumulative effects are by definition always harmful. PPG guides the decision maker to ensure that all the relevant considerations are taken into account.
- 12.22 I observed the area from the viewpoints within the AONB identified by the lpa (VPs A to E) and those in the ES (VPs 14, 16 & 17)<sup>52</sup>. VP 14 and VPs A, B and C are between 4.6km and 6km from Orby Marsh and up to some 15km from the nearest offshore turbines. VPs 16 and 17 and VPs D and E are between 7.4 and 10km from Orby Marsh and at the furthest viewpoint, VP D, is over 20km from the nearest offshore turbines. The lpa acknowledges and I agree that ES VPs 14, 16 and 17 are representative views from roads within the wider area [6.19]. Similarly, I agree that the additional viewpoints, VPs A to E<sup>53</sup>, are representative of views from public rights of way [6.19].
- 12.23 From all of these vantage points there are extensive long distance panoramic views across the coastal plain. In good weather conditions, the offshore turbines are visible and would act as a backdrop to the Orby Marsh turbines [APP 5 VPs 14, 16 & 17; APP6 VPs A-C]. Whilst the offshore array stretches for some distance along the coast, given the degree of separation between these viewpoints and the offshore array at 15 to 20km, I do not agree with either the lpa's submission that they "*create a confusing visual effect on*

<sup>51</sup> PPG ID: 5-022-20140306

<sup>52</sup> CD A2 Volume 3.

<sup>53</sup> LPA 4.

views" across the coastal plain or LCC's submission that they form a "*defining feature*" in the view [6.20, 7.20]. I consider the Orby Marsh turbines would form a compact group against the backdrop of the offshore turbines and although closer to the various viewpoints would not appear materially larger than the offshore turbines [APP 5 VPs A & B, 7.36]. Similarly, the compactness of the Orby Marsh turbines, the extensiveness of the open views and the influence of the big skies would not result in an impression of a narrowing of the Outmarsh between the AONB and the coast or that the offshore array encroached onto the Outmarsh [6.26, 7.34 & 7.35]. I was conscious that the offshore turbines do have a significant effect on the immediate coast, but are not, as the lpa suggest, visually dominant [6.28]. Whilst there would be some views of the Orby Marsh turbines from the coast these would be mostly from the edge of the resorts and from further along the coast to the north. However, I was not conscious that the turbines would be seen against the scarp slope of the AONB or in the context of the turbines at Croft or the other potential turbines to the south-west. Where the Orby Marsh turbines would be seen in the same view with those at Croft the visual impact would be mitigated by the degree of separation between them and the context provided by the big sky [CD A2 Volume 3 VP 21]. In places the turbines would be partly screened by localised planting (CD A3 Volume 3 VPs 20 & 21). Thus, the magnitude of impact on visual receptors at and moving around the coast and away from it would be moderate.

- 12.24 As to the cumulative impact of the Orby Marsh turbines with the existing turbines to the south-east at Croft and the potential for turbines at Middle Marsh, Bank House Farm, Pinchbecks Farm and Sea Lane for those on the highway or using the public rights of way there would be opportunities for static and sequential views. However, again the magnitude of the impact would be reduced by the mitigating effects of the openness of some of the views, the big skies, the degree of separation to these turbines and the degree of separation between them [APP 6 VP A]. As to those turbines to the north-east, the number of opportunities for sequential views would be limited by the significant degree of separation at some 10km to 12km to the main group at Bambers, the limited height of the Lincolnshire Poacher turbine and tree and woodland planting within and on the edge of the AONB [App 6 VP C].
- 12.25 At the start of my conclusions, I expressed reservations about the quality of the ES photomontages and their value. However, in terms of assessing the impact on views out from the AONB, I consider my conclusions are confirmed by reading the ES photomontages together with photographs produced by the lpa and the wirelines and photographs produced by the appellant [LPA 4, APP 5 & APP 6]. When read together, the mitigating influence of the openness of the views, the big skies and the degree of separation are apparent. In this context the introduction of the Orby Marsh turbines would not materially add to the visual impact of turbines in the area. In this context, I consider the Orby Marsh turbines would not conflict with the duty to conserve and enhance the natural beauty of the AONB or materially impact on the availability of expansive sweeping views from the scarp edge.
- 12.26 Travelling on the main tourist routes and some of the secondary routes, east to west and north to south through the Outmarsh and vice versa there would



be sequential views of the Orby Marsh turbines with those off and onshore [5.157]. In particular, where topography and planting would permit, for those travelling along the C541 immediately to the south and along the A158 further to the south there would be significant visual impacts albeit for fairly short periods. Thus, in terms of people travelling through the landscape whilst there would be sequential views, the mitigating influences of this large scale landscape and big skies, the compact nature of the Orby Marsh scheme and the various degrees of separation, the magnitude of that effect would be moderate and would not result in an impression of the area being saturated by turbines [6.28].

### **Living Conditions**

- 12.27 The lpa does not object on the grounds that the turbines would have an unacceptable effect on residents' living conditions in terms of visual impact or noise. Other than taking part in discussions regarding appropriate planning conditions the lpa submitted no evidence on these matters.

### **Noise**

- 12.28 The Framework at paragraph 123 says that the decision maker should aim to avoid noise resulting from new development giving rise to significant adverse impacts on health and quality of life and mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development through, amongst other things, the use of planning conditions. The basis on which noise forms part of the assessment of a wind farm is set out at pages 74 and 75 of NPS EN-3, and more recently in the IoA Good Practice Guide and PPG. Whilst NPSs were developed to provide guidance on decisions relating to Nationally Significant Development Projects, which in relation to wind energy development involved schemes over 50MW, the Framework at paragraph 3 indicates that NPSs *"...form part of the overall framework of national planning policy, and are material considerations in decisions"*. Moreover, Footnote 17 to Framework paragraph 97 says, *"...in determining planning applications for such developments<sup>54</sup>, planning authorities should follow the approach set out in the National Policy Statement for Renewable Energy Infrastructure..."*. The significant role that NPSs have in planning for renewable energy is reiterated in PPG.
- 12.29 NPS EN-3 says that, taking account of the latest industry good practice, "ETSU-R-97 - The Assessment and Rating of Noise from Wind Farms" should be used to assess and rate the noise from wind energy developments. PPG confirms that ETSU should be used and refers to IoA Good Practice Guidance. The IoA guidance published in May 2013 sets out current good practice for the application of ETSU and has been endorsed by the DECC as a supplement to ETSU.
- 12.30 NPS EN-3 reiterates that the Government is satisfied, on the balance of subsequent scientific research, that the key conclusions of ETSU and the limits it recommends remain a sound basis for planning decisions. Paragraph 2.7.58 of EN-3 says that where the correct methodology has been followed

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<sup>54</sup> Wind Energy Developments.

and a wind farm is shown to comply with ETSU recommended noise limits the decision maker may conclude that he/she will give little or no weight to adverse noise impacts from the operation of the turbines. The following paragraph 2.7.59 indicates that where a wind farm cannot demonstrate compliance with the recommended noise limits set out in ETSU-R-97 the decision maker will need to consider refusing the application unless suitable noise mitigation measures can be imposed by imposing conditions.

- 12.31 Notwithstanding the above, reference is made by the objectors to the use of BS4142 and submit that NPS EN-1 and decisions by Inspectors and the SoS supports its use alongside ETSU to provide a benchmark for whether complaints are likely and by whether noise impacts would be acceptable [8.50]. I disagree with the suggestion that national planning policy/guidance and practice supports the use of BS4141 in assessing the likely noise impact and acceptability of a wind energy scheme.
- 12.32 NPS EN-1 is overarching policy and the issue of noise and vibration is dealt with as one of several generic impacts [CD D2]. Paragraph 5.11.6 indicates that *"operational noise..., should be assessed using the principles of the relevant British Standards and other guidance"* and Footnote 137 does, as an example, identify BS4142. However, it is important to note the qualification at the end of this sentence, which refers to, *"...and other guidance"* and the need to read the paragraph as a whole. Paragraph 5.11.6 goes on to qualify the advice in the first sentence and says that the assessment of particular noise sources may be contained in the technology specific NPSs i.e. EN-3 for renewables. EN-3 at paragraphs 2.7.52 to 2.7.62 sets out the position regarding the assessment of noise and vibration from onshore wind farms. EN-3 recognises that noise created by the operation of wind turbines is different to general industrial noise and says that the, *"...assessment of noise from the operation of wind turbines should use ETSU-R-97, taking account of the latest industry good practice"* [CD D3 paragraphs 2.7.54 & 2.7.56]. There is no reference to BS4142 in NPS EN-3 or PPG when assessing the noise impacts of a proposed wind energy scheme. If BS4142 was a relevant benchmark against which to test wind energy schemes it would be referenced in the specific national policy guidance. Whilst the various appeal decisions highlighted refer to BS4142, my reading and understanding of these references is that they are statements of the position if BS4142 were applied [Docs 50, 51 & 68]. However, as far as I can see there is no indication in any of these cases that BS4142 was applied in determining the acceptability or otherwise of the schemes.
- 12.33 My understanding of BS4142 is that it relates to audibility and illustrates and quantifies degrees of change which provides an indicator of the likelihood of complaints. This is an approach materially different from the aims of the Framework, NPSs and PPG which do not seek to ensure a turbine should be inaudible. Rather, the policy practice approach promoted through the application of the framework set out by ETSU is that turbines should be located and designed so that increases in ambient noise levels around noise sensitive developments are kept to acceptable levels in relation to existing background noise levels i.e. a threshold beyond which there would be an unacceptable change to a resident's living environment. The Government's position, on which there have been numerous opportunities for change, is

that ETSU, qualified by latest industry good practice, is currently the basis on which the noise impact of wind turbines is to be assessed. Therefore, using BS4142 would not only conflict with unambiguous Government guidance but on the basis that it is an audibility test rather than a threshold test, it would unnecessarily constrain wind energy development. Paragraph 1 of the Executive summary sets out what ETSU is i.e. *"...a framework for the measurement of wind farm noise and gives indicative levels thought 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 and administrative burdens on wind farm developers or local authorities"*.

- 12.34 ETSU is a staged process which indicates that turbine noise limits should be set relative to background noise levels. Thus, the first stage of applying ETSU is the measurement of prevailing background noise levels during the day and night time periods. Thus, the noise levels which the turbines should not exceed and the judgement as to whether any increases in background noise levels are within an acceptable range are wholly dependent on the outcome of the noise monitoring exercise. Therefore, the key to the whole process and the key to retaining public confidence in the process and the ultimate decision is that the surveying of background noise levels is done as accurately as possible. The issue, as the appellant neatly sums it up, is whether or not the information submitted by the appellant provides a robust background noise analysis from which it is appropriate to derive applicable ETSU noise limits [5.19].
- 12.35 Whilst the appellant has for this inquiry carried out an assessment based on the procedures set out in ETSU and current good practice, the background noise levels on which the assessment is based were measured in July/August 2002 and wind shear was measured at the site between April 2000 and March 2001 [CD A2 Volume 4 Appendix 7.3 & APP 11 paragraph 4.9]. The use of data that is 12 to 13 years old, the nature of the measuring equipment, particularly the windshields, the fact that measurements were taken at an atypical time of the year i.e. the peak holiday season when background noise levels would be increased by high level of tourist traffic on the C541, the location of the noise measuring equipment and other errors/changes made by the appellant are sources of significant concern to objectors [8.2 to 8.14].
- 12.36 Given that no significant changes in the area were identified that would materially alter the background noise environment, the age of the data is, on its own, not significant [SM3 Appendix 2 paragraph 3.5]. As to the nature of the equipment, the inquiry conducted by my late colleague Mr Cookson had evidence which confirmed that, *"All windshields used ...were double skinned in construction. They were constructed ...with reference to the ETSU publication Noise Measurements in Windy Conditions: ETSU W/13/00386/REP"* [SM2 Appendix 3 page 2]. Moreover, whilst it may not be a scientifically significant comparison, I note that photographs of the noise measuring equipment used by the appellant in 2002 appear to show similar types of windshields to those used in photographs contained in SGN 1 published in September 2014 [CD A2 Volume 4 Appendix 7.2 & CD J11 Figures 5, 6 and 7]. In these circumstances, I consider the nature of the equipment used in 2002 would

not materially affect the robustness of the appellant's current noise assessment [CD J11, 5.36 & 5.37].

- 12.37 Background noise measurements were taken at the end of July/beginning of August during the peak holiday season when traffic levels on the roads leading to the coastal resorts increase significantly. The IoA guidance recognises that background noise levels at any location may be subject to seasonal variations. However, the IoA's most up-to-date guidance, SGN 1 indicates that there is no compelling evidence that it is necessary to carry out background noise surveys at any particular time of the year or over 2 or more separate periods. Accordingly, the IoA advice is that background noise surveys may be carried out at any time of the year provided that seasonal effects leading to raised noise levels can be excluded by the selection of the measurement position or by exclusion of non-typical data during the analysis [CD J11 SB6].
- 12.38 Here, 2 of the background noise measurement locations, Wilcox Farm and Marsh House Farm are close to the C541 and it is acknowledged that they would be subject to material levels of road traffic noise. As such they have not been used in the noise analysis as proxy locations to determine noise limits. Specific concerns were raised relating to road traffic noise contamination of the background levels recorded at Spring Cottage and the property on South Ings Lane [8.34-8.39]. Given the levels of traffic experienced on the C541 during the tourist season and, in my experience, the pervasive nature of road traffic noise, it is not inconceivable that background noise levels at both South Ings Lane and Spring Cottage, which are located some 1km and 1.3km respectively from the C541, would be subject to a degree of road traffic noise [8.12]. This, in my view, raises reasonable questions about the effect road traffic noise would have on the derivation of background noise levels during this period as opposed to the likely background levels that would be experienced outside the peak holiday season. However, given the acknowledged limitations of the analysis presented by the objector [5.45] and what I consider to be cogent criticisms of the appellant's attempts to assess the impact of road traffic noise on background levels at these properties, I have found it impossible to come to a firm conclusion that, in line with the IoA guidance in SGN 1 at SB6 [CD J11] that atypical road traffic noise has been appropriately accounted for.
- 12.39 As to where background noise levels are measured, ETSU does not suggest that they need to be taken at every property or even at the nearest property rather they should be undertaken at representative properties that have been agreed with the lpa. ETSU indicates that the noise limits applied to protect external amenity should only be those areas of the property that are frequently used for relaxation or activities for which a quiet environment is highly desirable. This suggests that measurement locations should seek to reflect areas that people would normally use for external rest and relaxation. Thus, it is extremely important that residents are fully involved in and aware of the process and its implications.
- 12.40 Whilst the more recent guidance contained in the IoA GPG is more detailed than that contained in ETSU, the general thrust of advice on appropriate noise monitoring locations is broadly similar. The IoA guidance indicates that

where possible measurements should be made in the vicinity of a dwelling in an area frequently used for rest and recreation and that identifying the most appropriate location is a matter of professional judgement. The objective is to measure typical or indicative levels and not the absolute lowest levels of background noise. As an aside at this point, I agree with the appellant that it would not be appropriate to use the quiet daytime results for Wyche Farm as a proxy for all other noise receptors [5.54 & 5.55]. The noise measurement location should be one which would be exposed to noise from the turbines whilst being best screened from other noise sources such as nearby roads or vegetation. The measurement location should reasonably represent external areas for daytime noise and building facades containing windows for night-time noise. The position should be within 20m of the dwelling unless there are particular reasons for measuring at more distant positions such as vegetation or denial of access. On this last point, ETSU advises that the measurement position should be at least 10m from a building façade. I take from the inclusion of “*at least*” in this statement that 10m is not the maximum distance. Thus, in certain circumstances a distance considerably greater than 10m would be acceptable.

- 12.41 The IoA SGN 1 recognises that a measurement position can act as a proxy for other positions in the immediate vicinity but given that in such cases the choice of such positions is often one of the main areas of dispute it is important to carefully select “representative” survey locations and equally important to justify the selection decision [CD J11 paragraph 2.5.4]. This reflects my comments in 12.33 above.
- 12.42 Background noise levels measured at South Ings Lane, Spring Cottage and Sloothby are used as proxies for 8, 6 and 3 other properties respectively [App 15 Table C.4]. Particular concerns are raised regarding the positioning of sound meters at these properties and the validity of using them as proxies for the noise assessment locations. In terms of the justifications for selecting the particular locations, in the ES other than a reference to many of the potentially affected properties in Sloothby having “*numerous trees and high hedges close to the dwellings*” and that the measurement location, in an agricultural field to the east of an agricultural building, was selected to provide “*an indication of the lower levels likely to be experienced by dwellings within the village, i.e. the position was partially sheltered but there were no trees or bushes located close to the microphone*” there was no explanation for the choice of locations at South Ings Lane or Spring Cottage [CD A2 Volume 4 Appendix 7.2]. There is no indication that the occupants of dwellings were approached to identify areas frequently used for rest and recreation so as to assist the acoustician in his/her judgement as to the appropriate location for the placement of the sound meter. Similarly, other than that a statement from the acoustician<sup>55</sup> who carried out the noise assessment for this indicated that the measurement undertaken at the various locations “*would be representative of the general amenity area around the surveyed dwellings and any other locations for which the measured noise data is used as a proxy to derive the appropriate noise limits*”, there was no elaboration on the justification for these locations.

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<sup>55</sup> This acoustician and his firm were not involved in the original 2002 background noise survey.

- 12.43 Whilst the choice of the microphone location at Sloothby does not reflect areas frequently used for rest and recreation, the reasoning in the ES regarding the choice of location appears to me to be sound. Given that noise created by wind in trees and vegetation is a common element in most rural locations, and given the indication that dwellings in Sloothby have numerous trees and high hedges, I consider that the choice of the measurement location would be acceptable as a proxy to derive appropriate noise limits at potentially affected properties around Sloothby. Indeed, given the absence of trees and hedgerows to the south of the monitoring location I consider it likely that noise levels measure would be lower than potentially experienced at such dwellings and likely to be robust.
- 12.44 In my experience, at some rural properties identifying areas frequently used for rest and recreation and representative of the general amenity area around the dwelling can be difficult because of the way many of the plots are configured and their relationship to agricultural activities. South Ings Lane struck me as an example of the problems acousticians can face and in such cases consultation with the occupier is critical. This property is positioned in the north-east corner of a roughly triangular plot. To the north, east and south are agricultural fields and immediately to the west is South Ings Lane. The garden and vehicle parking area for this property is located to the south and front of the dwelling. The spot where the microphone was located is in a triangular area of mown grass between the access and parking area and the northern boundary close to a hedge and a maturing tree. Whilst I was unable to gain access to the whole of the garden from what I was able to see and from the ES photograph it struck me that, in the absence of a justification for the selection of this position, this area would not appear to be an area frequently used for rest and recreation for the dwelling at South Ings Lane or other proxy properties [CD A2 Volume 4 Appendix 7.2 Figure 4].
- 12.45 The particular concern relating to Spring Cottage is that the sound meter was placed on the edge of a track, which contains a field hedge on one side with a mature deciduous tree, between 2 fields of cereal crops some 60m to the south of the dwelling [CD A2 Volume 4 Appendix 7.2 Figure 1]. The occupier of Spring Cottage confirmed that he had not been approached to host such equipment [Doc 28]. The objector's submission is that the noise levels measured would be affected by the rustling of the densely packed seed heads [8.16]. It was suggested that a location at Rose Cottage, which is adjoined by Habbertoft Farm and Coppins Cottage would be more appropriate.
- 12.46 Paragraph 2.5.5 of IoA SGN 1 says, *"Although equipment should generally not be located close to hedges, shrubs or noise-generating vegetation, except in those situations where such locations might be 'typical' of the amenity area around the dwelling and around other dwellings for which the measurement location is a proxy. Wind-generated noise from low level vegetation, particularly in sheltered gardens, is generally less likely to affect measurement than noise from trees. Where measurement positions are necessarily placed outside the curtilage of a dwelling (perhaps because access to the premises cannot be obtained) particular care should be taken to select a position that can reasonably be judged as being representative of the dwelling and other dwellings, perhaps on the basis that the positions are similar in terms of the nature and density of and distances from local trees*

*and vegetation and experience the noise of the same sound sources with similar separation distances and screening."*

- 12.47 Given that Coppins Cottage is surrounded by dense trees and hedge planting, Habbertoft Farm is adjacent to an agricultural engineering works [5.50] and screened by Rose Cottage and Rose Cottage has an exposed curtilage to the south-east towards the turbine site and the areas at Spring Cottage that appeared to me to be areas frequently used for rest and recreation are immediately between the house and a dense hedge, I consider the location of a sound meter outside the boundary of Spring Cottage could reasonably be judged as being representative of the dwelling and other dwellings. Whilst IoA guidance indicates that wind generated noise from low level vegetation is generally less likely to affect measurement than noise from trees this is referred to in the context of sheltered gardens and a sound meter placed close to a large field planted with a cereal crop falls outside this guidance. Thus, in the absence of a justification for choosing this location again I am concerned that noise measurements here could be affected by a significant noise source.
- 12.48 Drawing the above together. Given the uncertainty over the likely impact of road traffic noise on background measurements at Spring Cottage and South Ings Lane, the uncertainty of the likely impact of placing the sound meter close to a large field of cereal at Spring Cottage and concerns about the representativeness of the background noise measurement location at South Ings Lane, I consider it is reasonable to treat the results of the noise assessment, and as a consequence the derived noise limits, with considerable caution.
- 12.49 Several points were made about data reliability and it was acknowledged that previous assessments of the noise data had contained some errors. In particular these related to the coordinate locations for predicting turbine noise [8.11] and the time stamping of data in the January 2014 assessment as GMT and not BST [8.13] and the use of 1 standard deviation as opposed to 2 standard deviations relating to wind shear [5.63]. The errors relating to the coordinate locations and time stamping were corrected in the September 2014 assessment [5.20; APP 14 & 15]. Wind shear calculations carried out by the appellant are consistent with IoA guidance [5.63]. Similarly, whilst the sound meters used have a noise floor of 20 dB (A), given they conform with the type of sound meter recommended in current good practice and the context in which noise limits have been proposed [5.33], I am satisfied that the use of this equipment would not materially affect the setting of noise limits [5.33].

#### Noise Predictions

- 12.50 This area of concern relates to the nature of ground conditions in the area and the appropriate choice of the ground condition factor as an input into the noise propagation model. The prediction for the assessment of onshore turbine noise uses the widely accepted ISO 9613-2 standard and the relevant equation relating to ground effects has 3 inputs  $G=1$  for soft ground,  $G=0$  for hard ground and  $G=0.5$  for semi-hard ground. In applying this standard, the IoA GPG recommends that  $G=1$  should not be used and that whilst a ground

factor of  $G=0$  is commonly used as it will tend to provide robust predictions in most situations, it can over predict noise levels. The IoA for consistency recommends the use of  $G=0.5$  [CD J6 SB20]. The appellant has followed the methodology set out in the IoA GPG in all the calculations of noise immission levels [5.56].

- 12.51 Based on research carried out in Australia by Coopers and Evans (C&E) in 2012 and the specifics of the ground in the Orby area i.e. waterlogged and subject to hard winter frosts and baked during the summer, the objector considers that the use of  $G=0.5$  is not sufficiently robust and that using the hard ground factor of  $G=0$  would be more appropriate [8.48-8.57]. This is on the basis that the C&E research suggests that the use of  $G=0.5$  materially under predicts noise levels whereas the use of  $G=0$  whilst it results in an over prediction the difference is not material and therefore more robust.
- 12.52 Government policy is that ETSU and current good practice is to be used to set the noise limits for a scheme. The IoA GPG is endorsed by DECC as the relevant good practice. Moreover, I am aware that independent reviews indicate that, subject to the appropriate use of parameters, ISO 9613-2 adequately models the typical worst case scenario for noise from wind farms. The input parameters are a matter of professional judgement and, in my view, there would have to be sound reasons for departing from endorsed good practice. One of the issues relating to the C&E research is that is based on Australian metrics which are materially different to those used in the UK and therefore the data has to be manipulated to provide some form of comparison [5.57, 5.58 & 8.51]. There are clearly differences in the appellant's and objector's approaches to this research. However, in my view, the outcome of the comparison still is that the use of  $G=0$  results in a material over prediction of noise levels in flat areas such as Orby Marsh. Whilst operating on a very worst case scenario is superficially attractive, the degree of precaution has to be balanced against the impact on power output. Thus, the use of a parameter that leads to a significant over prediction of noise immissions would unnecessarily constrain the amount of renewable energy provided and negate the contribution to tackling climate change and maintaining energy security.
- 12.53 The C&E research was published in 2012 and would have been available to the authors of the IoA GPG when they were drawing together the GPG published in May 2013. Therefore, had there been any concerns that the recommended use of  $G=0.5$  would not result in a robust assessment would have been reflected in the GPG. Regarding the specific ground conditions, the majority of wind farm schemes are located in the rural area where ground conditions are subject to the type of changes referred to by the objector. This is a factor that would have been apparent to the authors of the GPG when recommending the use of  $G=0.5$ . I have noted the observation by the objector that a previous noise study produced for the 2013 inquiry used  $G=0$  [8.56]. That, in my view, comes under the heading of the use professional judgement in determining the appropriate input parameters. Here, having reviewed all the evidence, given the topography of Orby Marsh, the use of a semi-hard ground parameter ( $G=0.5$ ) is a reasonable compromise and consistent with the May 2013 IoA GPG.



### Construction Noise

- 12.54 During construction, noise would be generated by the coming and goings of vehicles and the activities related to the excavation of turbine foundations, the pouring of concrete and the erection of the turbines. However, this noise would be limited to the construction period, which in the scheme of things would be relatively short, and could be suitably mitigated by the imposition of appropriate planning conditions.

### Cumulative Noise Impacts

- 12.55 The submission is that the appellant's noise assessment does not properly reflect the impact of noise from the 129 turbines located some 5.5km offshore. The evidence produced regarding noise impacts from the offshore turbines is highly technical and theoretical and clearly open to varying interpretations. The objector's assessment of the impact of the offshore turbines appears to have required "relocating" the positions of the proposed turbines and the positions of the offshore turbines with distances for the offshore turbines of up to 0.5km. Whilst the objectors suggest that this "*...ensured the analysis was conservative*" [8.79], it strikes me that it suggests that the resultant conclusions need to be treated with a significant degree of caution.
- 12.56 GPG on how to assess noise propagation over water appears to be contradictory and there is an absence of definitive advice on how such a calculation should be undertaken [5.67]. IoA SGN 6 relates to "Noise Propagation over Water for On-Shore Wind Turbines" and paragraph 1.2.2 specifically states that the SGN "*...does not cover noise propagation for offshore wind farms*". At paragraph 2.2.3 it provides a formula for use where the body of water is at least 700m in extent and then confusingly goes on to say "*or the turbine is offshore*" [CDJ19, 5.68]. Accordingly, I am not clear whether it is a methodology that can appropriately be used at all or, if it can, whether it would only be appropriate to use it to assess noise levels from offshore turbines on receptors on the shoreline and not several kilometres inland. On the evidence before me and the explanations given at the inquiry, regarding the dampening or reflective properties land and water have on the propagation of sound, I am not persuaded that it is an appropriate methodology to use to assess noise effects on receptors some 4 to 5km inland [5.69 to 5.71].
- 12.57 The science is highly theoretical and complex and objective data and its assessment is so highly manipulated that it needs to be viewed with great caution. However, that being the case, the position as I understand it is that the noise levels in the vicinity of Orby Marsh that residents are already said to be experiencing as a result of the offshore arrays are broadly similar to those being suggested would occur if the Orby Marsh turbines were commissioned [5.78]. The basis of the objector's case is that the levels of noise generated by the Orby Marsh turbines would unacceptably affect residents and harm the tranquillity of the area. However, despite the fact that the majority of the offshore turbines have been operational for some time, there is no evidence that complaints have been received by the Ipa from residents around Orby or indeed from residents living on the coast

regarding disturbance from noise from the offshore turbines. In these circumstances, I consider that even if the offshore turbines and Orby Marsh turbines would cumulatively result in an increase in noise levels, it would be negligible.

#### Amplitude Modulation (AM)

- 12.58 ETSU recognises that AM can occur and accounts for that in setting noise limits. However, experience since has indicated that AM, generally referred to as Excess AM (EAM), was occurring in isolated instances in ways not anticipated by ETSU. A characteristic of EAM is that it contains higher levels of low frequency noise, the thumping type noise, and is more likely to propagate through walls and is experienced downwind when background noise levels are low and wind shear is high [10.22].
- 12.59 EAM does not occur with all wind farm schemes and this phenomenon has been subject to extensive debate and on-going academic and practical research. However, my understanding is there is still no universally accepted definition of EAM; what causes EAM is not fully understood and as its occurrence is dependent on a number of interacting factors that are specific to a location it is not feasible to reliably predict the likelihood of EAM occurring at any particular wind farm and where EAM has been reported occurrences may be relatively infrequent.
- 12.60 The IoA GPG indicates that evidence in relation to EAM is developing and that at the time of publication, May 2013, its advice is that it is not good practice to assign a planning condition to deal with AM. Although ReUK has published research and advice on EAM along with a suggested planning condition, that advice and the condition has not been endorsed by the IoA. In response to this issue, I understand the IoA has set up a working group to provide guidance for its members on how to measure and rate AM but not the setting of an acceptable threshold for AM, which it considers is a policy matter for the Government. I understand DECC is to commission a study into the acoustic character of AM with the view to recommending how to define an appropriate threshold.
- 12.61 Although both the appellant and the objector submitted evidence in relation to EAM both agreed that control by a condition was necessary. In light of the on-going research into the EAM both parties expressed confidence that an appropriate methodology for measuring and rating AM and an appropriate metric to control AM if it was assessed to be a problem within the lifetime of any permission would be achieved. On this basis a suggested condition that required that no development commenced until a scheme had been submitted for the assessment and regulation of AM was agreed between all the main parties [Doc 86 SC 21, 8.97 & 11.7].

#### Headroom

- 12.62 The objector's submission is that the headroom between the predicted turbine levels and the ETSU limits are not sufficient and that some properties, Rose Cottage in particular, would experience noise levels above the ETSU limits. Based on the appellant's calculations, at wind speeds of 5m/s the margin between predicted turbine noise levels and the ETSU daytime limit

would be 0.2 dB [8.68 & APP 15 page 52 Table C.13]. At several other properties the margins between the predicted levels and ETSU would be below 3 dB. In the objector's submission these tight margins do not allow room for error or the potential for a cumulative impact from the 129 offshore turbines. The objector points to other appeal decisions where a lack of headroom between predicted noise levels and ETSU limits was a material factor in the overall decision [8.71]. However, in my experience, this is not a universally adopted approach but based on particular concerns raised in those cases. I am familiar with 2 of the cases referred to, CD H42 Grise and CD H20 – Spalding Common/Airfield. In both those cases there were particularly issues identified with the nature of the noise assessments, largely relating to the collection of background noise levels that gave rise to concerns regarding the degree of confidence that should be applied to the noise assessments. Moreover, experience and guidance has moved on since those decisions. Accordingly, whilst similar decisions should be treated in the same way, I do not consider the above decisions amount to a precedent that I should necessarily follow.

- 12.63 ETSU does not refer to the lack of headroom being a factor in determining whether noise levels are appropriate. Moreover, there is no published guidance on at what level the lack of headroom should become a material concern. Paragraph 2.7.58 of NPS EN-3 says that where the correct methodology has been followed and a wind farm is shown to comply with ETSU recommended noise limits the decision maker may conclude that he/she will give little or no weight to adverse noise impacts from the operation of the turbines. Here the noise limits have been derived using the appropriate ETSU methodology and up-to-date guidance and based on a candidate turbine that at lower wind speeds i.e. 4 to 6m/s has one of the highest sound power levels. Thus, a material margin of error is built into the noise assessment.

#### Residential Visual Impact

- 12.64 A Residential Amenity Survey, based on appropriate methodology has been undertaken [CD A2 Volume 3 Figure 6.8 & Volume 4 Appendix 6.6]. This study assessed the impact of the turbines on dwellings up to 4km to 4.5km and settlements up to and beyond 10km from the site and concludes that the turbines would have a significant visual effect on individual dwellings and on settlements albeit the magnitude of effect would decrease with distance.
- 12.65 In some cases the protection of private interests may coincide with the public interest. However, PPG reiterates the long-standing tenet that the planning system does not exist to protect the private interests of one person against the activities of another. NPS EN-3 recognises that the introduction of turbines into a landscape would result in significant visual effects that would change the outlook of dwellings over an area up to several kilometres [CD D3 paragraph 2.7.48]. In this context, the identification of a significant change, or indeed a significant change in the outlook of a substantial number of dwellings, is not, on its own, necessarily harmful [9.17]. Therefore, in deciding whether, in the public interest, there is a case to resist this scheme the assessment of the impact on residential visual amenity has to go beyond that of identifying significant impact in EIA terms.

- 12.66 The visual component of residential amenity should be assessed in the round. This type of assessment takes into account factors such as: separation distance, orientation, the size and layout of the dwelling including internal circulation, division between primary and secondary rooms, garden and other amenity space, arc of view occupied by the turbines, views through the turbines and the availability of screening. Once these factors are assessed, the question to ask is, would the presence of the turbines be so unpleasant, overwhelming and oppressive, that the dwelling would become an unacceptably unattractive place in which to live.
- 12.67 Thus, when viewed objectively, if any single property were to be rendered an unattractive place in which to live then that would be sufficient reason to dismiss the appeal. Whilst this approach to engaging the public interest test is not formalised in NPSs, the Framework or PPG, it is one that has been adopted by the SoS, appellants, Ipas and Inspectors. In my view, it is an approach that strikes the right balance between the objective of ensuring adequate protection for communities and the deployment of renewable energy developments.
- 12.68 OWAG submits that the execution of the survey was poor and contained errors and as such it should be treated with caution [9.16]. Whilst such errors are regrettable, as with the ES photomontages, I have not relied solely on the Residential Amenity Survey, but rather I have based my assessment on the accompanied visits made to several properties in the surrounding area and my unaccompanied tours of the area.
- 12.69 I visited several of the properties that ring the site, some more than once, the nearest of which included a group of 3 at Habertoft, which includes Rose Cottage some 900m/1km to the west and Spring Cottage at about 1.2km. The properties to the north, south and east are located slightly further away. I am satisfied that these dwellings are representative of properties in the immediate and wider area for undertaking an assessment for the public interest test I outline above.
- 12.70 In views from the dwellings, the turbines would appear well spaced and their overall composition well balanced and at most would occupy a relatively small arc of the overall view. For each of the dwellings visited and, having carefully assessed their potential relationship with the turbines and their internal and external layouts, I conclude that the change in their outlook, whilst significant would not, given the degree of separation and the height and spread of the turbine array, make those dwellings unacceptable and unattractive places in which to live.

#### Conclusions on the Effect on Living Conditions

- 12.71 Whilst many residents would experience a significant change in outlook, the degree of which would lessen with distance, that change would not be such that it would make the occupation of these dwellings or use of their external amenity areas unacceptable or unattractive places in which to live.
- 12.72 In terms of noise my overall conclusion starts from the basis that ETSU is a staged process and noise limits should be set relative to background noise levels. Thus, the first stage of applying ETSU is the measurement of

prevailing background noise levels during the day and night time periods. Thus, the noise levels which the turbines should not exceed and the judgement as to whether any increases in background noise levels are within an acceptable range are wholly dependent on the outcome of the noise monitoring exercise. The issue, as the appellant neatly sums it up, is whether or not the information submitted by the appellant provides a robust background noise analysis from which it is appropriate to derive applicable ETSU noise limits [5.19].

- 12.73 In terms of setting night-time noise limits, these are proposed at a blanket 40 dB(A) for all properties, which is below the fixed limit for night- time of 43 dB(A) recommended in ETSU. As to appropriate daytime noise limits, whilst I consider some elements of the noise assessment to be robust and consistent with current good practice, given my concerns regarding the measurement and treatment of atypical road traffic noise from the C541 during the tourist season and concerns regarding the nature of the noise measurement locations at South Ings Lane and Spring Cottage, I consider the outcome of the noise assessment and the setting of daytime noise limits should be treated with considerable caution and there is the potential that the living conditions of residents in the area, and particularly those at Spring Cottage and Rose Cottage, could be unacceptably affected at significant periods of the year when background noise levels are not affected by tourist related traffic on the C541.

### **Tourism**

- 12.74 Tourism plays a significant role in the economy of East Lindsey with an emphasis on the coastal resorts [7.48]. LCCs submissions on the effect on tourism rely on using one figure taken from work carried out to assess the potential socio-economic impact of the Navitus Bay offshore wind farm, more particular the section on the potential operational maintenance impacts. That figure was that *"14% of summer visitors... agreed that 'the wind farm is likely to put me off visiting the area, I'm likely to visit elsewhere'"*. LCC applies this figure to income from tourism in East Lindsey and suggest that the area would incur substantial losses. However, LCC acknowledge that this impact would not, on its own, be determinative it should feature in the overall balance of harm against benefits [7.52].
- 12.75 The Navitus Bay (NB) study is substantial and LCC, focusing on one figure in one part of the study and applying it, uncritically, to East Lindsey, has ignored other significant parts of the study. The NB study includes a review of tourism impacts during the construction and operational phases of 8 offshore wind farms elsewhere in the UK, including the Lynn and Inner Dowsing arrays off Skegness [LCC 4D]. This analysis showed that there was no pattern of adverse impacts on tourism by domestic tourists from offshore wind farms [LCC 4E paragraph 21.101]. In relation to the Skegness wind farms, the study indicates that trips and nights stayed increased during construction and operation of the turbines and concluded that it would appear that these wind farms have had no detrimental effects on domestic tourism levels in Skegness or Lincolnshire as a whole [LCC 4E page 32]. In the same section of the NB Bay study that refers to the 14% of visitors unlikely to return, it indicates that *"overall... for both the summer and spring visitors the*

*presence of the operational wind farm is unlikely to have a major bearing on whether or not... to visit the area again..." [LCC 4E paragraph 21.185].*

- 12.76 Given LCC's intentions to drive forward growth in the tourist economy, I appreciate and understand its concerns [7.50]. However, no evidence was produced that any businesses in the vicinity of Orby Marsh would be materially affected by the erection of the turbines. Moreover, taking into account the wider evidence available regarding the potential impact of turbine developments on the local tourist economy there is no evidence to suggest that this scheme would have a materially adverse effect on tourism in East Lindsey or that it should be accorded weight in the overall planning balance.

### **Other Considerations**

#### **Shadow Flicker**

- 12.77 At this latitude, only properties within 130 degrees either side of north, relative to the turbine and within 10 rotor diameters of it could potentially be affected in this way. Here, given the turbines would have a rotor diameter of 62m, the gap to potentially affected dwellings would be such that shadow flicker would not unacceptably affect residents.

#### **Public Safety, Flooding and Health**

- 12.78 Whilst it is not unknown for ice to form on a turbine blade [10.12] or for a turbine to collapse, shed a blade or piece of a blade, these events are rare and where they have occurred there are no recorded examples of any injuries. Where the potential for icing may exist, turbines are fitted with vibration sensors that detect imbalance caused by icing which would prevent their operation. Although reference was made to a map issued by LCC and the possible presence of a maintainable track through the site, no further evidence was submitted to substantiate these claims [10.39]. The Ordnance Survey maps supplied with the ES do not show any public rights of way across the site or within topple over distance of any of the turbines. The planning officer's report confirms there are no public footpaths or bridleways running through the site or that LCC Highways (Footpaths) or the Lincolnshire Fieldpaths Association raised any objection to the proposal [CD F8 page 53]. On balance, the risk of total or partial collapse would be low and as such the development would not represent an unacceptable hazard to public safety.
- 12.79 On flooding, an appropriate Flood Risk Assessment has been carried out and the Lindsey Marsh Drainage Board and the Environment Agency, subject to the imposition of an appropriate condition (SC 16), have no objection [CD F8 page 54]. Construction would require the introduction of substantial foundations, tracks, hardstandings and new culverts in an area where the water table is high. Whilst it is acknowledged that these new features would increase the risk of flooding, the risk would be low. The result of groundwater pollution from the turbine foundations/bases and from construction activity could be mitigated by the use of appropriate construction techniques, management and working practices [SC 12].
- 12.80 Some residents, drawing on concerns raised by local GPs and various papers on the health impacts of wind turbines expressed concern regarding the

impact of turbine noise on general health [10.13, 10.31]. Amongst others, these concerns relate to sleep disturbance, tinnitus, nausea, headaches and fatigue and heart related problems. Collectively, these issues are generally referred to as Wind Turbine Syndrome or Vibro-Acoustic Disease (VAD). Although there are many studies available on the Internet that purport to provide compelling evidence of harm from wind energy developments, they have not as far as I am aware been subject to scientific review and some are based on what appear to be very small and or self-selected samples. As such, a link between the operations of wind turbines and serious health problems continues to be unproven. Whilst I do not seek to downplay the seriousness of these concerns, there is nothing of substance to justify departing from Government advice on health matters relating to the operation of wind farms.

#### Property Values

- 12.81 Whilst the concern expressed by residents is understandable [10.13], it is not for the planning system to protect the private interests of one person against the activities of another. The issue is not whether a development would cause financial loss to neighbouring owners, but whether it would have detrimental effects on the locality generally and on amenities that ought to be protected in the public interest. Concerns relating to the impact on the value of an individual's property are a private matter and not one of public policy and as such it is not generally a material consideration. Other than assertion, there was no evidence before me to conclude that here in relation to property values there is a wider public interest that should be protected.

#### Ashley's Field

- 12.82 This private airstrip is some 2km to the north of the site. Whilst one of the take-off/landing strips runs north south, given the degree of separation, the turbines would have no impact on the safe use of this facility.

#### Television and Internet Reception

- 12.83 Whilst it is not unknown for the operation of wind turbines to interfere with television signals, digital television coverage is, in my experience, much more resistant to interference. Notwithstanding the limited likelihood of electromagnetic interference, the appellant has suggested a condition that should interference occur a mitigation scheme would be in place to provide for its alleviation. The condition, SC 15, provides for a scheme of investigation and mitigation to be submitted before any turbine is erected. This condition would enable the lpa to ensure that the concerns raised by potentially affected residents were addressed in any approved scheme.
- 12.84 LCC is promoting superfast wireless internet provision throughout the county to address the absence of or inadequacies in existing wired internet services. Concern was expressed that the turbines could interfere with potential services in this area. However, there was no objective evidence other than assertion to support this concern or the request for an appropriate planning condition. Indeed, following an explanation by LCC of its concern, the appellant produced a letter from the supplier of the rural service indicating support for the wind farm [Doc 56]. It is reasonable to assume that if the

supplier had legitimate concerns regard possible interference to existing or planned wireless internet services such as unreserved support would not have been forthcoming. In light of this and in the absence of objection from other telecommunications operators [Doc 44], I have no reason to conclude that this scheme would have an adverse effect on existing/planned wireless internet services or other mobile communications

#### Cultural Heritage

- 12.85 The ES assessment of potential impacts on archaeological and cultural heritage assets (HAs) is CD A2 Volume 2 pages 217 to 256 and Volume 3 Figures 10.1 to 10.32. A further study of Boothby Hall and Gunby Hall was carried out in October 2010 [CD A7].
- 12.86 Section 66 (1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 requires the decision maker to have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. No LP or emerging CS policies relating to cultural heritage were referred to at the inquiry.
- 12.87 Framework paragraphs 132 and 134 indicate that when considering the impact of a development on the significance of a HA great weight should be given to its conservation. The significance of a HA can be harmed through alteration or destruction of the asset (physical harm) or development within its setting (non-physical or indirect harm). Substantial harm to or loss of a Grade II Listed Building should be exceptional and substantial harm to a HA of the highest significance should be wholly exceptional. Framework Paragraph 133 says that where development would lead to substantial harm to the significance of a HA, permission should be refused unless that harm is necessary to achieve substantial public benefits that outweigh the harm. Paragraph 134 says that where a development would lead to less than substantial harm to significance, the harm should be weighed against the public benefits of the proposal.
- 12.88 This largely centred around the potential effect the turbines would have on Boothby Hall a Grade II listed building [10.25-10.30]. I had the opportunity to visit Boothby Hall and its grounds as part of my wider inspection of the area and the appellant provided a wireline visualisation using Boothby Hall as VP [Doc 45]. The Supplementary Environmental Information (SEI) also includes a wireline visualisation [CD A7 Figure 10.A.1]. Regarding the wire visualisation it has to be borne in mind that this is a "bare earth" interpretation of the potential view and does not take into account the presence of hedge and tree planting.
- 12.89 The ES contains a brief description of Boothby Hall and assesses the likely magnitude of impact and the significance of the effect of the development as Moderate [CD A2 Volume 2 page 240]. Boothby Hall lies some 2.5 km directly to the west of the site and the description provided by the Mrs Glanville is good summary of the Hall and its immediate surroundings [10.26]. There would be no direct effect of the turbines on the Hall; the potential for harm in this case arises from the positioning of the turbines within its setting i.e. non-physical harm.



- 12.90 Boothby Hall is a substantial building that is orientated almost north-south with the principal elevation and main entrance on the southern elevation. A short distance to the north-east is the former coach/wash house, again a substantial building. The immediate environs of the Hall include substantial mature blocks of mature, mostly deciduous tree planting and hedging, the most extensive of which, Crow Grove, is a short distance to the east between the Hall and the site. The Hall is not visible from the site. In this context it struck me that the setting of the Hall is confined to its immediate gardens, which are largely surrounded by dense mature tree planting and whilst I appreciate the significant and obvious attachment the family has to Boothby hall, I considered it to be of medium significance.
- 12.91 The main view from the Hall and its principal room is to the south across a largely open garden area and agricultural field beyond. Given this orientation and the presence of substantial mature tree planting to the east, I consider that there would be no views of the turbines from the principal rooms and the entrance on this southern elevation and possibly very limited, if any, views from the garden area immediately to the south. Similarly potential views of the turbines from the immediate grounds of the Hall to the east and north would be heavily filtered and narrow because of the mature tree planting (CD A7 Figure 22). In this context and given the degree of separation at some 2.5km and the height of the turbines at 81m, I consider the potential impact on the significance of Boothby Hall and its setting would be moderate and for the purposes of the balancing exercise required by paragraph 134 of the Framework the effect would be less than substantial.
- 12.92 Whilst I was not asked to visit any of the other HAs referred to in the ES or SEI, I was able to assess their relationship to the site and proposed turbines as part of my wider inspection of the area. From what I saw, I have no reason to dispute the conclusions of the ES or SEI on the potential impact of the turbines on the significance of these various HAs, which ranges from Neutral through Slight to Moderate. Thus for the purposes of the balancing act required by paragraph 134 of the Framework the effect on these assets would be less than substantial.

#### Horses

- 12.93 Horses, like human beings, have varying levels of tolerance to events and can be unpredictable. Horses that may react to the presence and operation of a turbine are just as likely to react to any sudden event. There are no bridleways across or near the site. All riders whether on the highway or off-road have to be aware of their own capabilities, the temperament of their mount, recognise that there will always be a risk and exercise the appropriate degree of caution. Turbines do not start suddenly and given the open character of the area, I was not aware of locations where turbines might suddenly appear in a view to distract a horse. There is nothing inherent in a wind farm or this proposal that would result in it creating a greater level of risk.

#### Ecology

- 12.94 The ecological value of the site and potential effects arising from the development are addressed in the ES [CD A2 Volume 2 pages 129 to 19].

The ES refers to various surveys carried out in 2001, 2004/2005 and 2008/2009. Following consultation on the 2010 ES assessment, Natural England (NE) and Lincolnshire Wildlife Trust (LWT) had no objections, subject to the imposition of conditions relating to post-construction monitoring and the implication of mitigation schemes. For the inquiry, the appellant provided an Update- Ecological Surveys July 2012 [Doc 58], a further Update dated December 2013 [Doc 59] and a Wintering Bird Survey dated February 2014 [Doc 60]. NE and LWT were re-consulted and both restated their lack of objection to the scheme [Doc 57 & Doc 61].

- 12.95 Regarding ecology, 2 conditions have been suggested; one relates to a pre-construction survey for the presence of water voles [SC 17] and, where appropriate, the submission of a mitigation scheme and a post construction monitoring scheme [SC 18]. Given the lack of objection from NE and the LWT, who had access to the ES and, if they had any concerns regarding the methodology employed or the nature of the surveys undertaken could have, requested further information and survey work, I have no reason to doubt the robustness of the 2010 ES or the 2012, 2013 and 2014 updates.
- 12.96 In terms of its habitat value, the site is intensively cultivated and managed arable land. Given this regime the habitat is generally species poor and has no statutory or non-statutory ecological designation. The surveys found that the site is used or overflowed by marsh harrier, peregrine and merlin, barn owl, lapwing, golden plover, kestrel, buzzard and sparrow hawk, wintering waders and wildfowl including species with populations that attain national and international importance at nearby European Sites, declining farmland passerine and game birds and a limited bat fauna. However, based on collision risk models, the risks of collision and any effects manifested are likely to be insignificant at anything above Parish level.
- 12.97 No other bird species were thought to be at significant risk of collision, including species such as curlew and dunlin that were seen to occur on the site infrequently as transients and that have populations integral to the internationally and nationally important wintering or breeding populations of The Wash and Gibraltar Point. The ES concludes that the turbines would not be a threat to the integrity of internationally important sites. For the declining farmland passerines and game birds that use the site and were judged to represent the most consistent aspect of its value, the potential for displacement was judged to be negligible. This is due in large part to the abundance of alternative habitat in the immediate locality and the opportunity implement appropriate mitigation.
- 12.98 The ES suggests that consistent with its featureless nature and the absence of semi-natural habitats the use of the site by bats is low. Moreover, the site's geographical and habitat characteristics were judged to reduce its importance as a migratory route. These factors would significantly limit the scope for significant impacts on bat populations in general, and the 2 species, the common pipistrelle and noctule bat, confirmed to use the site in particular. Design mitigation measures include siting turbines so that their blades do not over-sail field boundary ditches and hedgerows add further confidence that the scope for any significant impact on bats is low to negligible. Thus, the risk of collisions or any other turbine related impact

sources having a significant effect on the local breeding populations of both common bat species is assessed as low to negligible.

- 12.99 The surveys indicated limited use of the site by badgers and any impact would be mitigated by the design of the layout. Similarly, the potential impact on the use of ditches would be mitigated by pre-construction survey and the introduction of appropriate mitigation measures. The ecological updates identified only minor changes to the ES baseline and support the assessment of no significant impact on ecology. In light of these conclusions, in the absence of objections from NE and LWT and the imposition of appropriate conditions as referred to above, I conclude the scheme would not have an unacceptable impact on ecology.

#### Highway Safety

- 12.100 Traffic, particularly HGV traffic, would increase during the construction period. For some parts of the construction programme this would result in intense periods of HGV traffic and the movement of abnormal loads. In this context and given the use of roads in the vicinity by holiday traffic to the coast, I fully appreciate the residents' concerns regarding traffic generation and the potential impact on highway safety. The highway authority has no objection to the scheme on traffic generation or highway safety grounds and as far as I am aware there has been no objection by the Police to the scheme.
- 12.101 Suggested planning conditions include the submission of a transport plan and a construction method statement to be agreed with the lpa [SCs 11 & 12]. The transport plan would include provision for the routing, timing and scheduling of construction traffic movements that should accommodate residents' concerns regarding conflict with school starting and closing times and peak movements of holiday traffic. The SC relating to a construction method statement includes the provision for a pre and post construction condition survey of the public highway and the provision of repairs where appropriate. Thus, whilst there would be periods of disruption for local residents, there is no evidence to suggest that the proposal would have an unacceptable effect on highway safety.

#### Alternative Energy Sources

- 12.102 Submissions were made about the efficacy of wind turbines compared to other options available to tackle climate change and the level of energy contribution this scheme would make. Increasing the supply of energy from other options is not promoted within NPS EN-1 as an alternative to onshore wind energy. The UK RE Roadmap Update (2013) reaffirms the importance of onshore wind as part of the renewable energy mix. The update reiterates that onshore wind is one of the most cost effective large scale renewable energy technologies and the Government's commitment to onshore wind as a key part of a diverse energy mix contributing to our security of supply and carbon reduction targets. PPG does not alter that position or the position set out in the Framework that small-scale projects provide a valuable contribution to cutting greenhouse gas emissions.

## Human Rights and Localism

- 12.103 Representations were made that the rights of local people under Human Rights legislation would be violated if the appeal were allowed [10.37 & 39]. Framework paragraph 17, which identifies Core Planning Principles, refers to, *"support for the transition to a low carbon future in a changing climate ..."* and encouraging *"the use of renewable resources (for example by the development of renewable energy)"*. On meeting the challenges of climate change, Framework paragraph 93 says *"planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development"*. Renewable energy is, by definition, sustainable. Moreover, European legislation drives forward the installation of renewable energy schemes in order to meet Government commitments enshrined in national legislation. Renewable energy is at the forefront of the international objective of reducing CO<sup>2</sup> emissions, whilst providing for continuing economic development.
- 12.104 As for an individual's human right to enjoyment of the highest attainable standard of physical and mental health, qualified rights such as this involve balancing the fundamental rights of the individual against the legitimate interests of the wider community. The concept of proportionality is fundamental in deciding whether the impact on an individual would be disproportionate. In assessing whether there would be a potential violation it is necessary to consider whether the alleged adverse effect would be an inevitable consequence of the turbine development. Planning conditions also protect individuals and local community's interests. In any event, people are protected by other legislation or the common law, which it must be assumed will be applied effectively. The detailed characteristics of noise pollution events are controlled by the Environmental Protection Act, quite apart from the provisions set out in the suggested planning conditions.
- 12.105 Localism reflects the Government's objective of giving people the ability to become involved in and influencing decisions about development in their area. The Framework and PPG has been prepared with the view to give communities the power to set priorities for local development through up-to-date Local Plans that meet local development needs, to reflect local peoples' views of how they wish their area to develop and give communities the power to set the priorities for local development through neighbourhood planning. In this case, there is neither an up-to-date Local Plan nor a Neighbourhood Plan. Whilst The Localism Act 2011 introduced powers for people to make Neighbourhood Plans and Neighbourhood Planning Orders, it is not a community right to veto. What is required of the decision maker is for a balance to be struck between the legitimate planning concerns of local residents and, as in this case, the promotion of renewable energy as one of the strands in the Government's strategy for tackling climate change and maintaining the security of energy supplies.

### Appellant's Statement of Support (Doc 78)

- 12.106 Whilst I have no doubt that some residents either support the erection of wind turbines at Orby Marsh or are ambivalent, the objector's concerns regarding the statement of support raise some valid points about the nature of the survey and the weighting of responses [8.106]. Accordingly, I consider limited weight should be attached to the results of the survey.

### Planning and Energy Policy

- 12.107 The development plan is the starting point for decision making; development that accords with an up-to-date plan should be approved, and development that conflicts should be refused unless other material considerations indicate otherwise (Framework paragraph 12). With that as the starting point, the decision taking section of Framework paragraph 14 indicates that where the development plan is absent, silent or relevant policies are out-of-date planning permission should be granted where any adverse impacts of doing so would significantly and demonstrably outweigh the benefits. Framework, paragraph 215, goes on to say that due weight should be given to relevant policies in existing plans according to their degree of consistency with the Framework. NPSs are part of the overall framework of national planning policy and the Framework and PPG are material considerations in deciding planning appeals (Framework paragraphs 3 & 13).
- 12.108 The development plan comprises saved policies in the East Lindsey Local Plan First Alteration 1999 [4.26]. This LP does not contain any saved policies relating to the provision of renewable energy and as such, having regard to the guidance at paragraph 12 of the Framework, the LP is out-of-date. Other policies identified by the parties are Policies A4, A5 and C11.
- 12.109 Policy A4 – Protection of General Amenities says that development which unacceptably harms the general amenity of people living or working near a proposal will not be permitted. Such objectives are consistent with the Framework. The supporting text to the policy recognises that all new development has an impact on its setting and nearby residents and that this is not, on its own, a reason to refuse permission. In assessing the acceptability of a proposal the matters assessed include the potential for excessive noise, especially during unsociable hours; disturbance by movements to and from the site; harm to the distinctive character of the area and highway safety. The thrust of this policy relates to the protection of living conditions. Whilst I have considerable sympathy with the appellant's submission that the reference to the "*distinctive character of the area*" in the policy appears to be "out-of-place", it is part of an adopted development plan policy that has to be applied. Given that the protection of the countryside forms part of the Core Principles and objectives of the Framework I consider that Policy A4 is consistent with the Framework.
- 12.110 Policy A5 – Quality and Design of Development indicates that development will only be permitted where it improves the quality of the environment otherwise development will only be permitted where its design, including layout, scale and appearance, does not detract from the distinctive character of the area; the development retains features or characteristics that are important to the quality of the local environment including important medium

and long distance views and it is integrated within a landscaping scheme appropriate to its setting. The supporting text to Policy A5 says that particular attention will be paid to the design of development in, amongst others, the Fens and Marshes where special character has been identified. Developments in these areas must show how they have taken into account and respected their locally distinctive character. The thrust of this policy is aimed at new buildings and I have the same concerns expressed by my colleague in the Anderby Creek appeal decision [CD H17 paragraph 42] that it is difficult to apply it to a wind energy scheme.

12.111 The site is located outside the AONB. Policy C11 – Lincolnshire Wolds Area of Outstanding Natural Beauty identifies that the lpa will protect the natural beauty of the AONB by not permitting development that would, amongst other things, harm landscape features that contribute to the character of the area or harm the distinctive character, role or regional/local historic significance of the area or inhibit the quiet enjoyment of the AONB. This policy is consistent with the objectives of the Framework and relevant. The AONB Management Plan does not add anything to the approach fostered in the LP [4.33]. I consider the approach adopted by LCC's position statement to be inconsistent with the Framework and PPG and as such I attach limited weight to its provisions [4.37-4.39].

12.112 The emerging CS is at a very early stage and as such I attach limited weight to those policies in the planning balance [4.30-4.33].

12.113 Paragraphs 4.1 to 4.25 of this report summarise national energy and planning policy as it relates to renewable energy, protection of the landscape, visual amenity, noise and HAs and what is clear is:

- that the commitment to tackling climate change, our transition to a low carbon future and meeting binding national and international targets relating to energy mix and security remains unchanged and is one of the Governments key objectives ;
- that to meet the binding targets for greenhouse gas emissions and CO<sup>2</sup> reduction and to achieve an increase in the share of renewables in the energy mix a step change in our rate of progress is required;
- the delivery of renewable and low carbon energy and associated infrastructure through the planning process is central to the economic, social and environmental dimensions of sustainable development;
- that, notwithstanding concerns raised regarding efficiency appropriately sited onshore wind energy schemes where the correct weight has been given to the various environmental considerations (i.e. conserving and enhancing the natural environment, conserving HAs and seeking a good standard of amenity for residents), are one of the most cost effective and proven renewable energy technologies currently available for large scale deployment;
- that whilst onshore wind is the biggest single contributor to the pipeline of new renewable energy capacity and the pipeline of new projects is thought to be healthy, not all of the approved projects will be

commissioned and there is still an urgent need for new projects to come forward;

- that small-scale projects provide a valuable contribution to cutting greenhouse gas emissions.

### **Planning Balance**

12.114 In terms of weighing harm against benefits, the absence of harm relating to residential visual impact, ecology, drainage, highway and public safety are not added to the scales. What has to be balanced are the benefits of the scheme against landscape and visual impacts, the potential harm to residents through the impact of turbine noise and the less than substantial harm to HAs.

12.115 Given the nature of turbines as tall, dynamic structures, it is inevitable that there would be a landscape and visual impact on the Outmarsh and adjoining LCAs. In the area extending outwards from the turbines by some 0.5km, the scheme would create a Wind Farm Landscape where the turbines would be the dominant and most significant feature of the local landscape resulting in moderate harm in terms of landscape and visual impact. Beyond and not extending further than 1.5km, the turbines would result in a Landscape with Wind Farms Sub-Type where the turbines would continue to exert a moderately harmful landscape and visual effect impact on the Outmarsh [12.13]. Given the degree of separation, the scale of the turbines and the openness of the landscape and presence of the big skies the turbines on their own would not materially harm the landscape and enjoyment of the AONB [12.14]. The harm to HAs would in Framework terms be less than substantial.

12.116 In terms of cumulative landscape and visual impact, the existing wind farm developments and permitted schemes have and would be absorbed into the landscape such that the key landscape character of the coastal plain, i.e. openness and the availability of some wide open views and big skies, has been retained and is a "Landscape with Wind Farms" [12.18]. For these same reasons, I consider the introduction of the Orby Marsh turbines whilst they would result in a significant change to the local landscape character would not result in an unacceptable landscape and visual impact on the Outmarsh and beyond. In terms of cumulative impact, the Orby Marsh turbines would not conflict with the duty to conserve and enhance the natural beauty of the AONB.

12.117 On turbine noise, paragraph 2.7.58 of EN-3 says that where the correct methodology has been followed and a wind farm is shown to comply with ETSU recommended noise limits the decision maker may give little or no weight to adverse noise impacts from the operation of the turbines. The following paragraph 2.7.59 indicates that where a wind farm cannot demonstrate compliance with the recommended noise limits set out in ETSU-R-97 the decision maker will need to consider refusing the application unless suitable noise mitigation measures can be imposed by imposing conditions.

12.118 ETSU is a staged process which indicates that turbine noise limits should be set relative to background noise levels. Thus, the noise levels which the

turbines should not exceed and the judgement as to whether any increases in background noise levels are within an acceptable range are wholly dependent on the robustness and outcome of the noise monitoring exercise. This is the key to the whole process and key to retaining public confidence in the ultimate decision.

- 12.119 Noise measurements were taken at a time of year when background noise levels in the area are affected by atypical levels of road traffic. The C541 is one of the main signposted roads to the coastal holiday attractions at Ingoldmells/Skegness and in July/August experiences high levels of traffic. At this time of year, it is reasonable to expect that background noise levels would or could be materially higher than at other times. Whilst GPG indicates that noise surveys can be carried out at any time of the year this is subject to the proviso that seasonal effects leading to raised noise levels can be excluded by selection of the measurement location or by exclusion of the data. It strikes me that given the extended periods that background noise levels would be affected by noise from tourist traffic it would be difficult to exclude such noise from a relatively short survey exercise.
- 12.120 Based on the background noise levels derived from the July/August noise survey, the appellant's noise assessment indicates that the turbines could operate within ETSU limits. However, given the critical importance of the link between background noise level measurements and setting of turbine noise limits i.e. where background noise levels are lower, the quieter the turbine has to be and conversely where background levels are high the noisier the turbines can be, I am not persuaded on the evidence before me that, even allowing for margins of uncertainty built in to other stages of the ETSU assessment, these turbines could operate with ETSU limits and not result in harm to the living conditions of nearby residents at times of the year. Other than the noise limits proposed in the suggested conditions no alternative limits were proposed or discussed at the inquiry. However, given my concerns regarding the fundamental basis on which the noise limits are derived, I am not convinced that it would be reasonable to suggest alternative limits. This significant degree of doubt and the potential harm to residents' living conditions is, in my view, a key factor in the planning balance.
- 12.121 Predicting CO<sup>2</sup> savings and the amount of renewable electricity supplied to the grid over the lifetime of a wind farm is not an exact science. However, it is clear from both the appellant's and objectors' calculations the contributions would not be insignificant [5.180-5.181 & 9.29-9.32]. However, I do not consider the comparison made by the objectors of the individual contribution of one scheme to the overall national target to be useful [9.29 & 9.33]. A single wind farm, on its own, is not going to alter the balance in terms of climate change. It is only through the accumulated output of individual proposals for the generation of renewal energy that the statutory obligation to reducing greenhouse gases can be achieved. Thus, as part of the larger picture, the resultant savings and energy contributions over the life of this scheme would be very valuable and contribute to the urgent need for new renewable energy generating projects. These benefits must therefore attract significant weight.



- 12.122 In terms of economic benefit, the commissioning, construction and operation of the turbines would provide economic benefits both to the local and national economy [5.183]. However, in terms of economics, the objectors identify the additional cost of renewable energy in the form of a subsidy to the operator and are an additional cost to the consumer to be a negative impact that should be weighed in the balance against an individual scheme [9.30]. I do not agree that a S78 Inquiry into an individual planning proposal is the appropriate place to conduct or determine such a debate. My understanding of national energy policy on the promotion of renewable energy to date is that successive Governments have determined that public subsidy either through general taxation or through a charge on individual energy bills is currently appropriate. In my view, the role of public subsidy in national energy policy is a matter for the Government and Parliament to determine and the submissions made by the objectors is not a matter that I have attached weight to in the planning balance.
- 12.123 The landscape and visual impact of this scheme would result in moderate harm to the immediate area and as such there would be conflict with the objectives of LP Policy A4 and if considered relevant Policy A5. This conflict has to be viewed in the context that as the LP is silent in relation to renewable energy and as such the Framework indicates that in such cases planning permission should be granted unless the adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies of the Framework as a whole. In this context, if the matters to be balanced solely related to landscape and visual impact and the less than substantial harm to HAs, I consider that the benefits of the scheme in terms of the production of renewable energy and the contribution this would make to tackling climate change and maintaining energy security would clearly outweigh that harm [4.20].
- 12.124 However, adding in my concerns regarding the fundamental basis on which the noise limits for this scheme have been arrived at and the potential for unacceptable harm to the living conditions of nearby residents for significant periods of the year, and weighing this against the guidance at Framework paragraph 123, which indicates that planning decisions should aim to avoid noise giving rise to significant impacts on health and quality of life, I consider the balance shifts materially and in these circumstances the potential adverse impacts of this scheme on the living condition of residents would outweigh the benefits of the scheme when assessed against the policies of the Framework when read as a whole.
- 12.125 In light of the above conclusions and notwithstanding the significant weight I attach to the benefits of this scheme towards the national targets for the provision of renewable energy and tackling climate change, I conclude that the appeal should be dismissed. In coming to this conclusion, I have attached no weight to the proposed S106 Unilateral Undertaking proposed by the appellant, for 2 reasons. The first is that no signed agreement is in place and the second is that in line with the guidance contained at paragraph 204 of the Framework and the provisions of CIL Regulation 122 such an obligation is not necessary to make the development acceptable in planning terms. Moreover, it was acknowledged by the appellant that the proposed Unilateral

Undertaking could not form a material consideration in the determination of the appeal [11.10].

### **Conditions**

- 12.126 If the Secretary of State disagrees with my conclusions and concludes on the evidence produced by the appellant that my concerns regarding the derivation of the noise limits for this scheme and the potential for adverse impacts of the scheme on residents would not significantly and demonstrably outweigh the benefits of the scheme in providing for renewable energy and permission is granted the conditions contained at Annex A should be imposed.
- 12.127 Conditions are necessary to provide for the implementation of the permission, to define the permission and provide for micro siting (1, 2, 19, 20 & 21)<sup>56</sup>. Given the lead in times associated with wind farm schemes and the satisfying pre-commencement conditions, I consider a 5-year time limit is acceptable. Conditions are necessary to provide for decommissioning and restoration of the site at the end of the 25-year lifespan and the removal of any turbine that fails to produce electricity for a continuous period of 6 months (3 & 4). Conditions relating to details of traffic movements and works to the highway and a Construction Method Statement are necessary to minimise the impact of the development during the construction period (11 & 12). Conditions are necessary to minimise landscape and visual impacts (5, 6, 8, & 9); to mitigate the effect on the living conditions of residents (13, 15, 22 & 23); to minimise the ecological impact and to safeguard wildlife (17 & 18) and mitigate any impact on archaeological remains on the site and flooding (14 & 16). Conditions are necessary to protect aircraft safety (10). Where necessary, in the interests of precision and enforceability, I have reworded some of the suggested conditions.
- 12.128 The imposition of a condition relating to the submission of a Transport Plan (11), which provides for approval for the timing and routing of construction traffic, would mitigate the impact of the proposal on local roads and go some way to meet the concerns raised by OWAG regarding conflict with school traffic [11.4]. In the absence of any evidence to suggest that the scheme would interfere with broadband signals I consider the residents' and LCC's suggestion that the condition relating to television should be expanded to cover this issue is unnecessary and unreasonable.

### **Recommendation**

- 12.129 I recommend that the appeal be dismissed and that planning permission refused.

*George Baird*

Inspector

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<sup>56</sup> The number in brackets refers to the Condition number in Annex A.

## **ANNEX A – SUGGESTED CONDITIONS**

### *Time Limits, Decommissioning and Site Restoration*

1. The development hereby permitted shall be commenced before the expiration of 5 years from the date of this permission. Written confirmation of the commencement of development shall be provided to the local planning authority no later than 1 week after the event.
2. The development hereby permitted shall be removed in accordance with condition 3 below after a period of 25 years from the date when electricity is first exported from any of the wind turbines to the electricity grid ("First Export Date"). Written notification of the First Export Date shall be given to the local planning authority no later than 1 calendar month after the event.
3. Not later than 12 months before the expiry of the 25 year period referred to in condition 2, a decommissioning and site restoration scheme shall be submitted to the local planning authority for its written approval. 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 1 metre below the ground. The scheme shall also include the management and timing of any works, a traffic management plan to address likely traffic impact issues during the decommissioning period and restoration measures for the land where the turbines and any ancillary equipment and structures have been removed. The approved scheme shall be implemented within 12 months of either the expiry of the 25 year period referred to in condition 2 or the local planning authority's approval of the scheme, whichever is the later.
4. If any of the wind turbines hereby permitted fail to operate for a continuous period of 6 months, a partial decommissioning 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 a proposed programme of remedial works where repairs to the relevant turbine are required or 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; a traffic management plan; and a method statement and timetable for any necessary restoration works following removal of the relevant turbine. The scheme shall thereafter be implemented in accordance with the approved details and timetable.

### *Appearance of the Development*

5. The wind turbines shall have 3 blades which shall rotate in the same direction and the overall height of the wind turbines shall not exceed 81m to the tip of the blades when the turbine is in the vertical position and the hub height of the wind turbines shall be between 50m and 60m as measured from natural ground level immediately adjacent to the turbine base.
6. No wind turbine shall be erected on site until details of the finish and colour of the turbines and any external transformer units have been submitted to

- and approved in writing by the local planning authority. No name, sign, symbol or logo shall be displayed on any external surfaces of the turbines or any external transformer units other than those required to meet statutory health and safety requirements. The development shall thereafter be carried out and operated in accordance with the approved details
7. The construction of the on-site substation shall not commence until details of the external appearance, dimensions, layout and materials for the building and any associated land raising/plinth, compound or parking area and details of surface and foul water drainage from the on-site substation have been submitted to and approved in writing by the local planning authority. The construction of the on-site substation and any associated compound or parking area shall be carried out in accordance with the approved details.
  8. All electrical cabling between the individual wind turbines and between the wind turbines and the on-site substation building shall be installed underground.
  9. There shall be no permanent illumination on the site other than lighting of the turbines permitted by condition 10, lighting required during the construction period (as approved through the Construction Method Statement referred to in condition 12), lighting required during planned or unplanned maintenance or emergency lighting and a manual switch-operated external door light for the on-site substation door to allow safe access.
  10. No development shall commence on site until a scheme of infra-red aviation obstruction lighting to be installed on all of the wind turbines has been submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved scheme and the lighting will remain operational until the site is decommissioned in accordance with condition 3.

*Transport Plan and Construction Method Statement*

11. No development shall commence on site until a Transport Plan has been submitted to and approved in writing by the local planning authority. The Transport Plan shall include proposals for the routeing of construction traffic, the scheduling and timing of movements, the management of junctions to and crossings of the public highway and other public rights of way, the management of the site entrance from the public highway, temporary warning signs and any temporary or permanent works required in the public highway to enable the construction of the development. The Transport Plan shall be implemented as approved by the local planning authority.
12. No development shall commence until a Construction Method Statement (CMS) has been submitted to and approved in writing by the local planning authority. Thereafter, the construction of the development shall be carried out in accordance with the approved CMS. The CMS shall include details of the following:

- (a) The formation of the construction compound, access tracks and any areas of hard standing;
- (b) The provision of parking, loading and unloading, and manoeuvring areas for vehicles within the site;
- (c) A pre and post construction condition survey of the public highway between the entrance of the site and the A158 junction with the C541 public road including a timetable for the commission of those surveys, together with any repairs required to the public highway to return it to its previous condition provided that such repairs are directly and solely attributable to the development and in particular traffic accessing the site during the construction period;
- (d) The methods of working to be employed in the construction of the cable trenches, crane pads and foundation works;
- (e) The siting and details of wheel washing facilities;
- (f) The prevention of pollution of ground or surface water;
- (g) The method of disposal of foul drainage and sewage;
- (h) Dust management;
- (i) The cleaning of the entrance to the site and the adjacent public highway and the sheeting of all heavy goods vehicles taking spoil or construction materials to or from the site to prevent spillage or deposit of any materials on the highway;
- (j) The disposal of surplus materials;
- (k) Proposals for the restoration of the site following the completion of the development; and
- (l) A construction noise management plan (including identification of access routes, locations of materials lay-down areas, details of equipment to be employed, operations to be carried out and any necessary mitigation measures).

#### *Construction Hours*

13. Construction work and any associated traffic movements to or from the site shall only take place between the hours of 07.00 to 19.00 Mondays to Fridays inclusive and the hours of 08.00 to 13.00 on Saturdays with no such work or associated traffic movements on a Sunday or Bank or other Public Holiday. Works outside these hours shall only be carried out (a) with the prior written approval of the local planning authority or (b) in the case of an emergency, including wind turbine erection and works delayed due to the weather, provided that the local planning authority is notified by either a telephone call to the Head of Planning or in writing as soon as reasonably practicable (and in any event within 2 working days) following the emergency first being

identified, such notification to include both details of the emergency and any works carried out and/or proposed to be carried out, or (c) where they concern dust suppression or (d) where they concern the pouring of wind turbine foundations.

#### *Archaeology*

14. No development shall commence on site until the developer has secured the implementation of a programme of archaeological work which programme shall be undertaken in accordance with a Written Scheme of Investigation that has first been submitted to and approved in writing by the local planning authority. The Written Scheme of Investigation shall be based upon the agreed Written Scheme of Investigation in Appendix 10-1 of the Environmental Statement.

#### *Television Interference*

15. No wind turbine shall be erected until a scheme to secure the investigation and alleviation of any electro-magnetic interference with terrestrial television reception caused by the operation of the turbines has been submitted to and approved in writing by the local planning authority. The scheme shall be implemented as approved.

#### *Flooding*

16. The development shall be carried out in accordance with the mitigation measures set out in the Flood Risk Assessment Addendum prepared by Weetwood Environmental Engineering and dated October 2010.

#### *Ecology*

17. No development shall commence on site until a pre-construction survey in relation to the presence of water vole has been undertaken. The survey results and a programme of any mitigation measures identified as being required shall be submitted to and approved in writing by the local planning authority prior to any works associated with the development taking place. The programme of mitigation measures (if required) shall be implemented as approved in writing by the local planning authority.
18. No development shall commence on site until a post construction monitoring scheme in relation to birds and bats for a period of 1 year from the First Export Date has been submitted to and approved in writing by the Local planning authority. The scheme shall include details of the matters referred to in paragraph 8.17.1.2 of Volume 2 of the Environmental Statement. The scheme shall be implemented as approved in writing by the local planning authority.

#### *Micro-siting*

19. The development shall be constructed in accordance with the submitted plans listed at the end of this condition save that the meteorological mast, on site

- substation building, the wind turbines, associated crane pads and access tracks may, subject to the restrictions specified by this condition and with the prior written approval of the local planning authority, be micro-sited within 25m of their respective positions as shown on the submitted plans.
20. The restrictions on the micro-siting of the meteorological mast, substation building, wind turbines, associated crane pads and access tracks are as follows:
- (a) no part of the meteorological mast, substation building, any turbine, associated crane pad or access track shall be re-sited so that it is located outside of the red line shown on submitted Plan 1; and
  - (b) the final location of each turbine shall be such that the separation distance between the relevant turbine and its nearest watercourse and/or drainage ditch and/or hedge shall comply with the guidance on separation distances from linear features contained in Natural England Technical Information Note 51 (TIN 051) (February 2012).
21. The development hereby permitted shall be carried out in accordance with Drawing Nos. E4509 DWP Plan 1 - Planning Application Boundary; E4509 DWP PAF 3 - Site Track Layout; E4509 DWP PAF 4 - Site Access Details; E4509 DWP PAF 8 - Sub Station Plan E4509 DWP PAF 14 - Proposed Site Compound; E4509 DWP PAF 16 - Sub Station and Access Track and E4509 DWP PAF 17 - Compound and Access Layout.
22. No development shall commence until a scheme has been submitted to and approved in writing by the local planning authority providing for the assessment and regulation of amplitude modulation which may be generated by the development. The scheme shall be implemented as approved and maintained throughout the operation of the development.
23. 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, or derived from, the tables attached to these conditions at any dwelling which is lawfully existing or has planning permission at the date of this permission and:
- (c) The wind farm operator shall continuously log power production, wind speed and wind direction, all in accordance with Guidance Note 1(d). These data shall be retained for a period of not less than 24 months. 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.
  - (d) No electricity shall be exported from the wind farm until 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.

- (e) Within 21 days from receipt of a written request from the local planning authority following a complaint to it from an occupant of a dwelling alleging noise disturbance at that 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 and any identified atmospheric conditions, including wind direction and include a statement as to whether, in the opinion of the local planning authority, the noise giving rise to the complaint contains or is likely to contain a tonal component which may attract a penalty under these conditions.
- (f) The assessment of the rating level of noise immissions shall be undertaken in accordance with an assessment protocol that shall, prior to the commencement of any measurements, have been submitted to and approved in writing by the local planning authority. The protocol shall include the proposed measurement location identified in accordance with the Guidance Notes where measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, which may attract a penalty under these conditions, and clearly define what measured data or what range of measured data shall be included in the compliance assessment in order that the range of conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) represent those when the complainant alleges that there was disturbance due to noise, having regard to the terms of the written request of the planning authority under paragraph (c), conditions which prevailed during the times when disturbance is recorded (including any records concurrent with the noise survey), and such other matters as the independent consultant considers likely to result in a breach of the noise limits.
- (g) 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 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.
- (h) 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 for compliance measurements to be made under paragraph (c), 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.

- (i) Where a further assessment of the rating level of noise immissions from the wind farm is required pursuant to Guidance Note 4(c), 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 (d) above unless the time limit has been extended in writing by the local planning authority.

## TABLES OF NOISE LIMITS FOR ORBY MARSH WIND FARM RELATING TO CONDITION 23

**Table 1 - Between 07:00 and 23:00 - Noise limits expressed in dB L<sub>A90,10-minute</sub> as a function of the wind speed (m/s) directly measured at 10 metre height as determined within the site averaged over 10 minute periods**

Name	Wind Speed Directly Measured at 10m height											
	1	2	3	4	5	6	7	8	9	10	11	12
Wyche Farm	35.0	35.0	35.0	35.0	35.0	35.2	37.0	38.5	38.7	38.7	38.7	38.7
Howlet House	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Jasmine Cottage	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Ashleys Bungalow	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Wilcox Farm (non-involved)	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Wilcox Farm (involved)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Marsh House Farm	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6
Marsh Farm	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6
Sloothby	35.0	35.0	35.0	35.0	35.7	37.4	38.6	39.3	39.4	39.4	39.4	39.4
Spring Cottage	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6
Rose Cottage	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6
Coppins Cottage	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6
Habertoft Farm	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6
Field Farm	35.0	35.0	35.0	35.0	35.7	37.4	38.6	39.3	39.4	39.4	39.4	39.4
Dwelling at TF 1	35.0	35.0	35.0	35.0	35.7	37.4	38.6	39.3	39.4	39.4	39.4	39.4
Dwelling at TF 2	35.0	35.0	35.0	35.0	35.7	37.4	38.6	39.3	39.4	39.4	39.4	39.4
Dwelling at TF 3	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
South Ings Lane	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Malt Farm	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Malt Farm: Additional Dwelling	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Slackholme End House	35.0	35.0	35.0	35.4	37.3	39.9	42.5	44.6	44.8	44.8	44.8	44.8
Ivy House	35.0	35.0	35.0	35.0	35.0	37.3	39.8	41.5	41.6	41.6	41.6	41.6

**Table 2 - Between 23:00 and 07:00 - Noise limits expressed in dB L<sub>A90,10-minute</sub> as a function of the wind speed (m/s) directly measured at 10 metre height as determined within the site averaged over 10 minute periods.**

Name	Wind Speed Directly Measured at 10m height											
	1	2	3	4	5	6	7	8	9	10	11	12
Wyche Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Howlet House	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Jasmine Cottage	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Ashleys Bungalow	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Wilcox Farm (non-involved)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Wilcox Farm (involved)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Marsh House Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Marsh Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Sloothby	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Spring Cottage	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Rose Cottage	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Coppins Cottage	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Habertoft Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Field Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Dwelling at TF 1	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Dwelling at TF 2	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Dwelling at TF 3	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
South Ings Lane	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Malt Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Malt Farm: Additional Dwelling	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Slackholme End House	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Ivy House	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0

**Table 3 – Coordinate locations of the properties listed in Tables 1 and 2. Property Easting Northing.**

Name	Easting	Northing
Wyche Farm	552314	370709
Howlet House	553102	370561
Jasmine Cottage	553211	369902
Ashleys Bungalow	553221	370044
Wilcox Farm	553075	368489
Marsh House Farm	551244	367379
Marsh Farm	551160	367331
Sloothby	550427	371043
Spring Cottage	550225	368774
Rose Cottage	550282	369165
Coppins Cottage	550245	369198
Habertoft Farm	550253	369234
Field Farm	549729	370408
Dwelling at TF 1	550257	371066
Dwelling at TF 2	550009	370887
Dwelling at TF 3	552899	370909
South Ings Lane	553212	370100
Malt Farm	553372	371007
Malt Farm: Additional Dwelling	553428	370937
Slackholme End House	553547	370513
Ivy House	550429	367650

Note to Table 3: The geographical coordinate 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 Conditions

These notes are to be read with and form part of the noise condition (23). They further explain the condition and specify the methods to be employed 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 Guidance Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Guidance Note 3 and any amplitude modulation penalty applied in accordance with Guidance Note 4. 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 (DTI).

### Guidance 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 any required tonal penalty to be derived in accordance with Guidance Note 3 (with any such tonal penalty to be applied in accordance with Guidance Note 4).
- (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 mean wind and 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) and arithmetic mean wind direction in metres from north in each successive 10-minutes period at a meteorological mast erected on the site. Unless an alternative procedure is previously agreed in writing with the Planning Authority, wind speed data measured directly at a height of 10 metres on the meteorological mast shall be used as the basis for the analysis. It is this 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 also 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 and adjusted to British Summer Time where necessary.

- (e) Data provided to the Local Planning Authority in accordance with the noise condition shall be provided in comma separated values in electronic format.
- (f) A data logging rain gauge shall be installed in the course of the assessment of the levels of noise immissions. The gauge shall record over successive 10-minute periods synchronised with the periods of data recorded in accordance with Note 1(d).

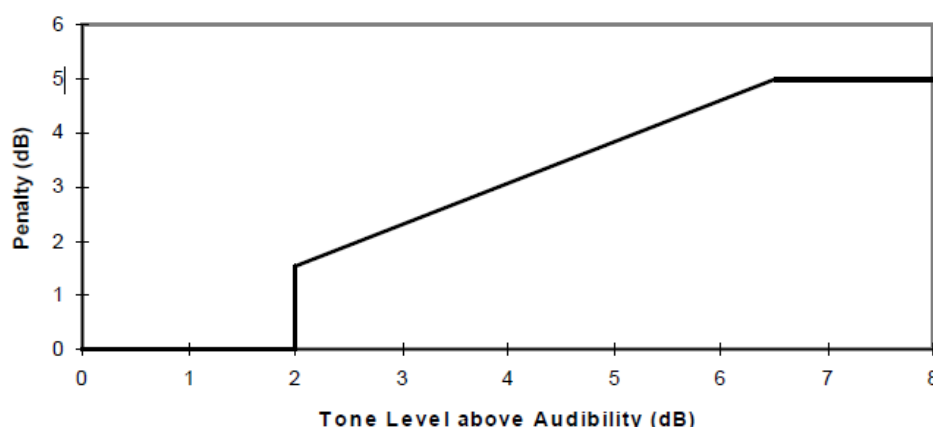
### **Guidance Note 2**

- (a) The noise measurements should be made so as to provide not less than 20 valid data points as defined in Guidance Note 2(b).
- (b) Valid data points are those measured in the conditions specified by the Local Planning Authority in its written protocol under paragraph (d) of the noise condition, but excluding any periods of rainfall measured in the vicinity of the sound level meter. Rainfall shall be assessed by use of a rain gauge that shall log the occurrence of rainfall in each 10 minute period concurrent with the measurements periods set out in Guidance Note 1. In specifying such conditions the Local Planning Authority shall have regard to those conditions which prevailed during times when the complainant alleges there was disturbance due to noise or which are considered likely to result in a breach of the limits.
- (c) For those data points considered valid in accordance with Guidance Note 2(b), values of the  $L_{A90,10\text{-minute}}$  noise measurements and corresponding values of the 10-minute wind speed, as derived from the measured 10m height wind speed using the procedure specified in Guidance Note 1(d), shall be plotted on an XY chart with noise level on the Y-axis and the 10m height measured 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.

### **Guidance Note 3**

- (a) Where, in accordance with the approved assessment protocol under paragraph (d) 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 Guidance Note 2 a tonal assessment shall be performed on noise immisions 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 the standard procedure, as described in Section 2.1 on pages 104-109 of ETSU-R-97, shall be reported.
- (c) For each of the 2-minute samples the tone level above or below 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 line 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 at 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 Guidance Note 2.
- (f) The tonal penalty is derived from the margin above audibility of the tone according to the figure below.



#### Guidance Note 4

- (a) If a tonal penalty is required to be applied in accordance with Guidance Notes 3 and 4 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 Guidance Note 2 and the penalty for tonal noise as derived in accordance with Guidance Notes 3 and 4 at each integer wind speed within the

range specified by the Local Planning Authority in its written protocol under paragraph (d) 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 Guidance 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 (e) 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 necessary wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment shall be undertaken in accordance with the following steps:
  - i. Repeat the steps in Guidance Note 2, with the required number of turbines shut-down in accordance with Guidance Note 4d off, and determining the background noise ( $L_3$ ) at each integer wind speed within the range requested by the Local Planning Authority in its written request under paragraph (c) and the approved protocol under paragraph (d) 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 or amplitude modulation penalties:

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

- iii. The rating level shall be re-calculated by adding the tonal penalty (if any is applied in accordance with Guidance Notes 3 & 4) 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 (e) 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 (e) of the noise condition then the development fails to comply with the conditions.



## **ANNEX B – APPEARANCES & DOCUMENTS**

### **FOR THE APPELLANT**

Marcus Trinick QC, Partner in Eversheds LLP Solicitors.

He called:

Mr J Stevenson MA; MPhil; Dip Econ Dev; CMLI; MRTPI;  
M. Inst Env Sci; FRGS.  
Jeffrey Stevenson Associates Ltd, Environmental and Landscape Planning

Dr A Bullmore BSc (Hons); PhD; MIOA.  
Hoare Lea.

Mr D Stewart MA (Cantab); DipTP; MRTPI.  
David Stewart Associates.

### **FOR THE LOCAL PLANNING AUTHORITY**

Richard Wald of Counsel instructed by Charlotte Lockwood, Legal Services Lincolnshire.

He called:

Mr D Loveday Bsc (Hons); MRTPI.  
Interim Planning Officer, East Lindsey District Council.

Mr P Russell-Vick Dip LA; CMLI.  
Director Enplan, Planning, Landscape & Environmental Consultants.

### **FOR LINCOLNSHIRE COUNTY COUNCIL**

Hashi Mohamed of Counsel instructed by N Weeks, Lincolnshire County Council.

He called:

Ms M Bolger CMLI: BA; PGCE, BA.  
Senior Associate, Gillespies Landscape Architects.

Mr M Simmonds BA (Hons); BTP; MRTPI.  
Lincolnshire County Council.

### **ORBY WINDFARM ACTION GROUP**

Mrs Watson.  
Mrs Smedley.  
Mrs Rees.  
Miss Watson.

### **INTERESTED PERSONS**

Mrs Smedley.  
Mrs Rodgers.  
Mr R Enderby.  
Mrs Glanville.

Mrs Watson.  
Mrs Cooper.  
Mrs Rodgers.  
Cllr. Newcombe.

Mr Smithson.  
Mr Grosvenor.  
Mr Watson.  
Mrs Whitham.

Dr J Yeadon.

Cllr. Davie.

## **DOCUMENTS**

### **APPELLANT**

#### *Mr Stevenson (Landscape & Visual Impact)*

- APP 1 - Summary Proof of Evidence.
- APP 2 - Proof of Evidence.
- APP 3 - Rebuttal Proof of Evidence.
- APP 4 - Appendices to the Proof of Evidence.
- APP 5 - Updated Cumulative Wireframes.
- APP 6 - ELDC Viewpoints A, B & C.

#### *Mr Stewart (Planning)*

- APP 7 - Summary Proof of Evidence.
- APP 8 - Proof of Evidence.
- APP 9 - Appendices to the Proof of Evidence.

#### *Mr Bullmore (Noise)*

- APP 10 - Summary Proof of Evidence.
- APP 11 - Proof of Evidence.
- APP 12 - Appendices to the Proof of Evidence.
- APP 13 - Supplementary Proof of evidence on Amplitude Modulation.
- APP 14 - Rebuttal Proof of Evidence.
- APP 15 - Appendices to the Rebuttal Proof of Evidence.

## **EAST LINDSEY DISTRICT COUNCIL**

#### *Mr Russell-Vick (Landscape & Visual Impact)*

- LPA 1 - Summary Proof of Evidence.
- LPA 2 - Proof of Evidence.
- LPA 3 - Supplementary Proof of Evidence.
- LPA 4 - Figures.

#### *Mr Loveday (Planning)*

- LPA 5 - Summary Proof of Evidence.
- LPA 6 - Proof of Evidence.
- LPA 7 - Appendices to the Proof of Evidence.

## **LINCOLNSHIRE COUNTY COUNCIL**

#### *Ms Bolger (Landscape & Visual Impact)*

- LCC 1 - Proof of Evidence.
- LCC 2 - Appendices to the Proof of Evidence

#### *Mr Simmonds (Tourism)*

- LCC 3 - Proof of Evidence.
- LCC 4 - Appendices to the Proof of Evidence.

## **ORBY WIND FARM ACTION GROUP**

### *Mr Sinclair (Landscape & Visual Impact)*

- OWAG 1 - Summary Written Statement.
- OWAG 2 - Written Statement.
- OWAG 3 - Appendices to the Written Statement.

### *Mr Enderby*

- OWAG 4 - Written Statement.

### *Mr Constable (Benefits)*

- OWAG 5 - Summary of Written Statement.
- OWAG 6 - Written Statement.
- OWAG 7 - Appendices to the Written Statement.
- OWAG 8 - Amendment to Written Statement.

## **MRS SMITH**

### *Mrs Smith (Noise)*

- SM 1 - Summary Proof of Evidence.
- SM 2 - Proof of Evidence.
- SM 3 - Appendices 1 to 11 to the Proof of Evidence.
- SM 4 - Appendices 12 to 20 to the Proof of Evidence.
- SM 5 - Robert Davis Note on Amplitude Modulation & Conditions.
- SM 6 - Differences between Predicted Turbine Levels & Background Levels.
- SM 7 - Road Noise Contamination at Spring Cottage.
- SM 8 - Road Noise Contamination on South Ings Lane.

### *Mr Stigwood (Noise)*

- SM 9 - Summary Proof of Evidence.
- SM 10 - Proof of Evidence.
- SM 11 - Appendices A to H to the Proof of Evidence.
- SM 12 - Appendices I & J to the Proof of Evidence.
- SM 13 - Appendices K & L to the Proof of Evidence.
- SM 14 - Cumulative Noise Impact.

## **DOCUMENTS SUBMITTED AT THE INQUIRY**

- Doc 1 - List of Application Plans.
- Doc 2 - Statement of Common Ground.
- Doc 3 - Further Statement of Common Ground Landscape & Visual Matters.
- Doc 4 - Appendix 3, Lincolnshire Wolds AONB Management Plan.
- Doc 5 - List of Potentially Relevant Cumulative Schemes.
- Doc 6 - Appellant - Opening Statement.
- Doc 7 - Lincolnshire County Council - Opening Statement.
- Doc 8 - OWAG - Opening Statement.
- Doc 9 - Mrs Smith - Opening Statement.
- Doc 10 - Letter 11 February 2014 from Lincolnshire Wildlife Trust.
- Doc 11 - LCC Resolution on Orby Application 5 December 2012.
- Doc 12 - S/195/02532/10 Ref. Notice Land Nth. Fen Bank, Friskney/Wainfleet St. Mary.

- Doc 13 - N/134/00118/13, 3 Micro Turbines Skegness Stadium.
- Doc 14 - N/208/01843/13, Scoping Opinion, Sloothby High Lane.
- Doc 15 - Appeal Decision APP/W1145/A/13/2194484, Dunsland Cross.
- Doc 16 - Letter from Rt. Hon. Sir Peter Tapsell MP, 11 February 2014.
- Doc 17 - The Effect of Focal Length on Perception of Scale & Depth in Landscape Photographs. Implications for Visualisation Standards for Energy Developments. Final Report 17 May 2012. Executive Summary.
- Doc 18 - Visual Representation of Wind Farms Consultation Questions & Overview. May 2013 SNH.
- Doc 19 - Extract Orby Marsh Wind Farm, ES Volume 4, 4/12/2002.
- Doc 20 - Extract Orby Marsh Wind Farm, ES Volume 4, 23/9/2005.
- Doc 21 - Copy of email dated 7 February 2014, SNH.
- Doc 22 - GBTS Analysis 2006-2012.
- Doc 23 - OWAG Submissions.
- Doc 24 - Submissions by Mrs Smedley.
- Doc 25 - Submissions by Mrs S P Rodgers.
- Doc 26 - Further notes submitted by Mr Enderby.
- Doc 27 - Submissions by Mr J Taylor.
- Doc 28 - Submissions by Mr P Groves.
- Doc 29 - Submissions by J Lingard.
- Doc 30 - Submissions by B J Wright.
- Doc 31 - Submissions by Miss K V Wright & Mr W B Wattam.
- Doc 32 - Submissions by Mr R Meffen.
- Doc 33 - Submission by Mrs P Glanville for Mrs Fox-Robinson.
- Doc 34 - Submissions by Dr J & Mrs K Yeadon.
- Doc 35 - Submission by G Watson
- Doc 36 - Submissions by Mrs M Cooper, Orby Parish Council.
- Doc 37 - Submissions by Mrs L Rodgers.
- Doc 38 - Submissions by Cllr. H Newcombe, ELDC.
- Doc 39 - Submissions by Cllr C Davie, LCC.
- Doc 40 - Submissions by Mr P Smithson.
- Doc 41 - Submissions by the Marsh Windfarm Action Group.
- Doc 42 - Submissions by Mr R Watson.
- Doc 43 - Submissions by S Whitham.
- Doc 44 - Bundle of Telecommunications responses.
- Doc 45 - Boothby Hall Wirelines.
- Doc 46 - Site Access Detail.
- Doc 47 - The Economic Impact of Renewable Energy Policy in Scotland & the UK, March 2011, Verso Economics.
- Doc 48 - Appeal Decision, APP/1545/A/12/2174982 Turncole Farm.
- Doc 49 - Tachibana Email 30 January 2014.
- Doc 50 - APP/R1038/A/09/2107667 Extract from Middle Moor/Matlock Moor.
- Doc 51 - Extract from Harelaw Renewable Energy Park Report June 2013.
- Doc 52 - ELDC Planning Committee Minutes 23 May 2013.
- Doc 53 - Note from Mr Enderby re Parish Council support.
- Doc 54 - Letter re publication of Lincolnshire Wolds AONB Management Plan 2013-2018.
- Doc 55 - Extract from ELDC Local Plan.
- Doc 56 - Letter dated 21 January 2014 from AB Internet.
- Doc 57 - Natural England letter dated 26 February 2014.
- Doc 58 - Updated Ecological Surveys July 2012.
- Doc 59 - Update Ecological Surveys December 2013.
- Doc 60 - Wintering Bird Survey February 2014.
- Doc 61 - Lincolnshire Wildlife Trust, letter 11 February 2014.
- Doc 62 - ReUK Press Release.
- Doc 63 - DECC Public Attitudes Tracker Survey – Waves 9 & 10.
- Doc 64 - Suggested Planning Conditions. – Non-Noise.

- Doc 65 - Suggested planning conditions – Noise.
- Doc 66 - Appeal Decision APP/F2605/A/12/2185306 Wood Farm, Shipdham.
- Doc 67 - Appeal Decision APP/D0840/A/14/2212162 Summercourt, Newquay.
- Doc 68 - Planning Act 2008 Clocaenog Forest Wind Farm Order.
- Doc 69 - Page 21, Extract from BS 8233:2014.
- Doc 70 - Extracts from Calculation of Road Traffic Noise –DOT.
- Doc 71 - Page 5, Extract from BS 8233:1999.
- Doc 72 - Enlarged Fig C12 from Appendices 6A, Dr Bullmore.
- Doc 73 - Annotated Table showing Potential ETSU Breaches.
- Doc 74 - Extract from Planning Practice Guidance on Noise.
- Doc 75 - E-Mail correspondence Dr. Bullmore/Mrs Smith/Mr Stigwood.
- Doc 76 - Sound Propagation Around Off-Shore Wind Turbines, L Johansson, 2003.
- Doc 77 - Long-Range Sound Propagation over the Sea with Application to Wind Turbine Noise. TRITA-AVE 2007:22 ISSN 1651-7660, Mathieu Boue.
- Doc 78 - Statement of Support for Orby Marsh Wind Farm & Telephone Poll.
- Doc 79 - Copy of letter dated 3 September 2014 from The Rt. Hon Edward Davey MP, Secretary of State for Energy & Climate Change.
- Doc 80 - OWAG response to the Statement of Support.
- Doc 81 - Cllr. Newcombe response to the Statement of Support.
- Doc 82 - Cllr. Davie response to the Statement of Support.
- Doc 83 - Addlethorpe Parish Council response to the Statement of Support.
- Doc 84 - Cllr. Smith response to the Statement of Support.
- Doc 85 - Planning for Onshore Wind Farms, SN/SC/4370 14/5/2014.
- Doc 86 - Suggested Amplitude Modulation Condition.
- Doc 87 - Figure SUP/01 Indicative Substation Hardstanding Plan.
- Doc 88 - Figure SUP/02 Indicative Substation Hardstanding Cross Sections.
- Doc 89 - Letter from Appellant and draft S106 Unilateral Undertaking relating to a Community Benefits Package.
- Doc 90 - LPA response to draft S106 Community Benefits Package Agreement.
- Doc 91 - LCC response to draft S106 Community Benefits Package Agreement.
- Doc 92 - OWAG response to draft S106 Community Benefits Package Agreement.
- Doc 93 - LPA Closing Submissions.
- Doc 94 - LCC Closing Submissions.
- Doc 95 - OWAG Closing Submissions.
- Doc 96 - Mrs Smith Closing Submissions.
- Doc 97 - Appellant Closing Submissions.
- Doc 98 - Bundle of written representations from interested persons

## LIST OF CORE DOCUMENTS

### A. APPLICATION DOCUMENTS

- A1. Planning Application Form
- A2. Environmental Statement (accompanied the Planning Application):
  - Volume 1 - Non-Technical Summary
  - Volume 2 - Written Statement
  - Volume 3 - Figures
  - Volume 4 - Appendices
- A3. Planning Appraisal (accompanied the Planning Application)
- A4. Design and Access Statement (accompanied the Planning Application)
- A5. Requests for Supplementary Environmental Information 2 August 2010 and 23 August 2010 (plus enclosures)
- A6. Letters dated 26 September and 12 October 2010 from Dulas, the Appellant's agent, to the ELDC regarding the Council's requests for Supplementary Environmental Information (plus enclosures)
- A7. Supplementary Environmental Information Document October 2010

- A8. Officer's Report dated 10 March 2011 and Committee Minutes
- A9. Refusal Notice dated 18 March 2011
- A10. Plans referred to in Refusal Notice dated 18 March 2011
- A11. Appeal Form
- A12. Grounds of Appeal/Written Representations
- A13. Summary Written Representations of Jeffrey Stevenson of Jeffrey Stevenson Associates Limited (JS/MCL/1) – August 2011
- A14. Written Representations of Jeffrey Stevenson of Jeffrey Stevenson Associates Limited (JS/MCL/2) – August 2011
- A15. Appendices to the Written Representations of Jeffrey Stevenson of Jeffrey Stevenson Associates Limited (JS/MCL/3 – JS/MCL/13) – August 2011

## **B. POST-APPEAL DOCUMENTS**

- B1. Statement of Case on behalf of Mark Caudwell Limited
- B2. Statement of Case on behalf of East Lindsey District Council
- B3. Statement of Case on behalf of the Orby Windfarm Action Group
- B4. Statement of Common Ground
- B5. Proposed Wind Farm, Orby Marsh: Construction Noise Assessment – Hayes McKenzie (21 May 2012)
- B6. Orby Marsh Wind Farm: An Assessment of Predicted Impacts on the Setting of Heritage Assets – Headland Archaeology (UK) Limited (22 May 2012)
- B7. Orby Marsh Proposed Wind Farm: Update Wintering Birds Survey. Bioscan (UK) Limited (May 2012)
- B7A. Orby Marsh Proposed Wind Farm: Update Ecological Surveys. Bioscan (UK) Limited (July 2012)
- B7B. Marsh Harriers Collisions and Disturbance Briefing Note, Bioscan (UK) Limited (July 2012)
- B8. Updated Statement of Case on behalf of Mark Caudwell Limited
- B9. Updated Statement of Case on behalf of East Lindsey District Council
- B10. Updated Statement of Case on behalf of the OWAG
- B11. Statement of Case on behalf of Mrs Angie Smith
- B12. Statement of Case on behalf of Lincolnshire County Council
- B13. Updated Statement of Common Ground
- B14. Updated Cumulative Wirelines [for hard copy see MCL/JS/4A]
- B15. Orby Marsh Proposed Wind Farm: Update Ecological Surveys – Bioscan (UK) Limited (December 2013)

## **C. RENEWABLE ENERGY BACKGROUND DOCUMENTS**

- C1. Meeting the Energy Challenge: A White Paper on Energy (May 2007) – Chapters 5 and 8
- C2. The UK Renewable Energy Strategy (July 2009)
- C3. Committee on Climate Change: Renewable Energy Review (May 2011)
- C4. The UK Renewable Energy Roadmap (July 2011)
- C5. Planning our Electric Future: A White Paper for Secure, Affordable and Low Carbon Electricity (July 2011)
- C6. Climate Change Act 2008 [only available electronically unless requested]
- C7. DECC: UK Renewable Energy Roadmap Update (December 2012)
- C8. UK Renewable Energy Roadmap Update (November 2013)
- C9. Annual Energy Statement – Oral Statement by Edward Davey 29/11/12)
- C10. DECC: Annual Energy Statement (November 2012)
- C11. Committee on Climate Change: Next Steps on Electricity Market Reform – securing the benefits of low carbon investment (May 2013)

- C12. DECC: Energy Trends (June 2013)
- C13. DECC: Onshore Wind Call for Evidence: Government Response to Part A (Community Engagement and Benefits) and Part B (Costs) (June 2013)
- C14. DECC: Digest of UK Energy Statistics (DUKES) (July 2013)
- C15. RenewableUK Press Release – New Research Shows Politicians Opposing Wind Farm ‘A Turn-Off’ for Voters (11 July 2014) See Document 62.
- C16. DECC Public Attitudes Tracker – Wave 9 (29 April 2014) See Document 63.
- C17. DECC Public Attitudes Tracker – Wave 10 (12 August 2014) See Document 63.

#### **D. NATIONAL PLANNING POLICY**

- D1. National Planning Policy Framework (March 2012)
- D2. National Policy Statement: Overarching Energy NPS (EN-1) (July 2011)
- D3. National Policy Statement: Renewable Energy Infrastructure (EN-3) (July 2011)
- D4. [LEFT INTENTIONALLY BLANK]
- D5. Localism Act 2011 [only available electronically unless requested]
- D6. Environmental Impact Assessment: A guide to good practice and procedures: A consultation paper, DCLG (2006)
- D7. Extracts from DCLG Note on EIA for LPAs
- D8. DCLG: Written Statement to Parliament, Local Planning and Onshore Wind, The Rt Hon Eric Pickles MP (6 June 2013)
- D9. DECC: Written Statement to Parliament, The Rt Hon Edward Davey MP (6 June 2013)
- D10. DECC: Press Release (6 June 2013)
- D11. Planning Practice Guidance for Renewable and Low Carbon Energy (July 2013) [NOW REPLACED BY CD D13]
- D12. DECC: Written Statement to the Institute of Acoustics, The Rt Hon Edward Davey MP (20 May 2013)
- D13. Online Planning Practice Guidance (March 2014) [only available electronically unless requested]

#### **E. DEVELOPMENT PLAN**

- E1. [LEFT INTENTIONALLY BLANK]
- E2. Saved policies from the East Lindsey Local Plan First Alteration (1999)

#### **F. OTHER LOCAL DOCUMENTS**

- F1. East Lindsey Draft Core Strategy – relevant policies
- F2. Land Use Consultants “Low Carbon Energy Opportunities and Heat Mapping for Local Planning Areas Across the East Midlands: Final Report” (March 2011) – extracts only
- F3. Officer’s Report dated 5 June 2003 in relation to planning application ref: N/134/02016/02
- F4. Officer’s Report dated 9 February 2006 PA ref: N/084/02334/05
- F5. East Lindsey District Landscape Character Assessment: Final Report (July 2009, ECUS Ltd) – extracts only
- F6. Reviewing Renewable Energy and Energy Efficiency Targets for the East Midlands – Final Report (Faber Maunsell and AECOM for the East Midlands Assembly, June 2009) – Executive Summary

#### **G. LANDSCAPE AND VISUAL DOCUMENTS**

- G1. Landscape Institute and IEMA, “Guidelines for Landscape and Visual Impacts Assessment” - 2nd Edition (2002)
- G2. Countryside Agency and Scottish Natural Heritage, “Landscape Character Assessment Series: Topic Paper 9 - Climate Change and Natural Forces - The Consequences for Landscape Character” (2003)
- G3. Natural England “Making Space for Renewable Energy: Assessing Onshore Wind Energy Development” (2009)

- G4. Natural England Climate Change Position Statement (2008)
- G5. Landscape Institute Advice Note 01/2011 "Photography and Photomontage in Landscape and Visual Assessment" (January 2011)
- G6. Scottish Natural Heritage "Assessing the Cumulative Impact of Onshore Wind Energy Developments" (March 2012)
- G7. University of Newcastle (2002), "Visual Assessment of Windfarms Best Practice", Scottish Natural Heritage Commissioned Report F01AA303A
- G8. Countryside Agency and Scottish Natural Heritage, "Landscape Character Assessment Series: Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity" (2004)
- G9. Horner + Maclellan and Envision (2006), "Visual Representations of Wind Farms: Good Practice Guidance", Scottish Natural Heritage Commissioned Report FO3 AA 308/2
- G10. Countryside Agency and SNH, "Landscape Character Assessment – Guidance for England and Scotland", prepared by Swanwick C and LUC (revised 2002)
- G11. Natural England "All Landscapes Matter" (2010)
- G12. The Visual Issue: An Investigation into the Techniques and Methodology used in Windfarm Computer Visualisations (2007)
- G13. Visualisation Standards for Wind Energy Developments, The Highland Council (2010)
- G14. The Landscape Institute, Institute of Environmental Management and Assessment: Guidelines for Landscape and Visual Impact Assessment, Third Edition (2013)
- G15. Press Release re Designation of Lincolnshire Wolds AONB 4 September 1972

## **H. APPEAL AND HIGH COURT DECISIONS**

- H1. [LEFT INTENTIONALLY BLANK]
- H2. Baumber (ref: APP/D2510/A/10/2121089)
- H3. Bradwell 1 (APP/X1545/A/06/2023805) – September 2007
- H4. Bradwell 2 (APP/X1545/A/06/2023805), January 2010, Appeal and HC
- H5. Burnthouse Farm (ref: APP/D0515/A/10/2123739 and APP/D0515/A/10/2131194) – SoS Decision and IR
- H6. Carland Cross (ref: APP/D0840/A/09/2103026)
- H7. Carsington (ref: APP/P1045/A/07/2054080) - Appeal and High Court Decision
- H8. [LEFT INTENTIONALLY BLANK]
- H9. Cotton Farm (ref: APP/H0520/A/09/2119385)
- H10. Croft (ref: APP/D2510/A/01/1155199)
- H11. [LEFT INTENTIONALLY BLANK]
- H12. [LEFT INTENTIONALLY BLANK]
- H13. Denbrook 2 (ref: APP/Q1153/A/08/2017162) – December 2009
- H14. Earls Hall (ref: APP/P1560/A/08/2088548)
- H15. [LEFT INTENTIONALLY BLANK]
- H16. [LEFT INTENTIONALLY BLANK]
- H17. Langham (ref: APP/D2510/A/10/2130539)
- H18. [LEFT INTENTIONALLY BLANK]
- H19. Orby Marsh (ref: APP/D2510/A/03/1121492)
- H20. Spaldington Airfield & Spaldington Common (refs: APP/E2001/A/10/2137617 and APP/E2001/A/10/2139965)
- H21. Swinford (ref: APP/F2415/A/09/2096369) – SoS Decision and IR
- H22. Tedder Hill (ref: APP/E2001/A/09/2097720)
- H23. [LEFT INTENTIONALLY BLANK]
- H24. [LEFT INTENTIONALLY BLANK]
- H25. Auchtermuchty (ref: P/PPA/250/675)
- H26. Kirkhale (ref: APP/P2935/A/10/2136112)
- H27. Beech Tree Farm, North of Goveton (ref: APP/K1128/A/08/2072150)
- H28. Beech Tree Farm, Lamerton (ref: APP/Q1153/A/04/1170234)
- H29. Bickham Moor (ref: APP/Y1118/A/08/2084526)



- H30. Bicton (ref: APP/H0520/A/11/2146394)
- H31. Biggleswade (ref: APP/P0240/A/11/2150950)
- H32. Boxworth (ref: APP/W0530/A/05/1190473)
- H33. Brent Knoll (ref: APP/V3310/A/06/2031158)
- H34. Brightenber (ref: APP/C2708/A/09/2107843)
- H35. Cottam (ref: APP/A3010/A/11/2146094)
- H36. Crosslands Farm (Armistead) (ref: APP/M0933/A/08/2090274)
- H37. Grove (ref: APP/A3010/A/06/2017850)
- H38. Easington (ref: APP/X1355/A/11/2164485)
- H39. Enifer Downs Farm (ref: APP/X220/A/08/2071880)
- H40. Foxton (ref: APP/X1355/A/11/2164483)
- H41. Gorsedd Bran (ref: APP/R6830/A/08/2074921)
- H42. Grise (ref: APP/H0928/A/09/2093576) - Inspector's Report Only
- H43. Hoff Moor (ref: APP/H0928/A/07/2053230)
- H44. Llethercynon (ref: APP/T6850/A/03/1122720) - SoS Decision and IR
- H45. Barmoor (ref: APP/P2935/A/08/2079520) - Inspector's Report Only
- H46. Mynydd y Gwrhyd (ref: APP/Y6930/A/05/1189610)
- H47. Mynydd James (ref: APP/X6910/A/09/2107007)
- H48. New House Farm (ref: APP/C3430/A/11/2162189)
- H49. Oldbury on Severn (ref: APP/P0119/A/11/2154175)
- H50. Old Racecourse & Hore Down (ref: APP/X1118/A/00/1056022)
- H51. Penpell (ref: APP/Q0830/A/05/1189328)
- H52. Princes Soft Drinks (ref: APP/W4705/A/09/2114165)
- H53. Queen Elizabeth Hospital (ref: APP/V2635/A/09/2112062)
- H54. Shipdham (ref: APP/F2605/A/08/2089810)
- H55. Sillfield (ref: APP/M0933/A/09/2099304)
- H56. Silloth (ref: APP/G0908/A/08/2073524)
- H57. Thornton Steward (ref: APP/V2723/A/11/2162516)
- H58. Three Moors (ref: APP/X1118/A/08/2083682)
- H59. Wandystead (ref: APP/Q2908/A/02/1099718)
- H60. Wogaston (ref: APP/N6845/A/00/1050866)
- H61. Batsworthy Cross (ref: APP/X1118/A/11/2162070 and APP/X1118/A/11/2171005) - Appeal and High Court Decision
- H62. Potato Pot (ref: APP/G0908/A/12/2189934)
- H63. Gayton le Marsh (ref : APP/D2510/A/12/2176754)
- H64. Treading (ref: APP/D0515/A/12/2181777 and APP/A2525/A/12/2184954) - SoS Decision Letter and IR
- H65. Cleek Hall (ref: APP/N2739/A/12/2172629)
- H66. Chelveston (ref: APP/K0235/A/11/2160077 & APP/G2815/A/11/2160078)
- H67. Lilbourne (ref: APP/Y2810/A/11/2164759)
- H68. Heckington Fen (ref: DPI/R2520/12/8) - SoS Decision Letter and IR
- H69. Spring Farm Ridge (ref: APP/Z2830/A/11/2165035) Appeal and High Court Decision
- H70. Nun Wood (ref: APP/YO435/A/10/2140401, APP/K0235/A/11/2149434 & APP/H2835/A/11/2149437) SoS Decision Letter and IR
- H71. Poolway Farm, Coleford (ref: APP/P1615/A/12/2184035)
- H72. Fraisthorpe (ref: APP/E2001/A/12/2179233)

## **J. NOISE DOCUMENTS**

- J1. Historical Wind Data collected by Renewable Energy Systems Limited [only available electronically unless requested]
- J2. ETSU-R-97: The Assessment and Rating of Noise from Wind Turbines (September 1996)
- J3. Consultation Responses received in respect of the Historical Wind Data collected by Renewable Energy Systems Limited
- J4. Noise Policy Statement for England (NPSE) (2010)
- J5. [LEFT INTENTIONALLY BLANK]

- J6. The IoA "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" (2013)
- J7. BS 5228 Parts 1 and 2: 2009 "Code of practice for noise and vibration control on construction and open sites" (2009)
- J8. Measurement of the Acoustic Noise Emission of the GAMESA G 58 Control version: G 58v0147r2 Wind Turbine Final Report Nº DEWI S AM 119 / 03, 2003-07-30
- J9. Historical Raw Background Noise Data relating to the Noise Assessment contained in the Appellant's Environmental Statement [only available electronically unless requested]
- J10. BS 4142: 1997 "Method for Rating Industrial Noise affecting Mixed Residential and Industrial Areas"
- J11. The IoA "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" Supplementary Guidance Note 1: Data Collection (Consultation Draft, November 2013)
- J12. The IoA "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" Supplementary Guidance Note 2: Data Processing & Derivation of ETSU-R-97 Background Curves (Consultation Draft, November 2013)
- J13. The Institute of Acoustics "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" Supplementary Guidance Note 3: Sound Power Level Data (Consultation Draft, November 2013)
- J14. Test Report Gamesa\_G58v0147r2 Dewi S AM 119-03 ELCerro 2003 [DUPLICATION OF CD J8]
- J15. Spectral Analysis of Noise Emissions in G5X Wind Turbines (Code GD037369-en) 20/01/09
- J16. The Institute of Acoustics "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" SGN Guidance Note 3: Sound Power Level Data (July 14)
- J17. The IoA "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" SGN Note 4: Wind Shear (July 14)
- J18. The Institute of Acoustics "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" SGN 5: Post Completion Measurements (July 14)
- J19. The Institute of Acoustics "A Good Practice Guide to the Application of ETSU-R97 for the Assessment and Rating of Wind Turbine Noise" SGN 6: Noise Propagation over Water for Onshore Wind Turbine (July 2014)

## **K. TOURISM DOCUMENTS**

- K1. "The impact of wind farms on the tourist industry in the UK" prepared by the British Wind Energy Association for the All-Party Parliamentary Group on Tourism (May 2006)
- K2. "The economic impact of wind farms on Scottish tourism" A report for the Scottish Government (March 2008) – Executive Summary.



## Department for Communities and Local Government

### **RIGHT TO CHALLENGE THE DECISION IN THE HIGH COURT**

**These notes are provided for guidance only and apply only to challenges under the legislation specified. If you require further advice on making any High Court challenge, or making an application for Judicial review, you should consult a solicitor or other advisor or contact the Crown Office at the Royal Courts of Justice, Queens Bench Division, Strand, London, WC2 2LL (0207 947 6000).**

The attached decision is final unless it is successfully challenged in the Courts. The Secretary of State cannot amend or interpret the decision. It may be redetermined by the Secretary of State only if the decision is quashed by the Courts. However, if it is redetermined, it does not necessarily follow that the original decision will be reversed.

#### **SECTION 1: PLANNING APPEALS AND CALLED-IN PLANNING APPLICATIONS;**

The decision may be challenged by making an application to the High Court under Section 288 of the Town and Country Planning Act 1990 (the TCP Act).

#### **Challenges under Section 288 of the TCP Act**

Decisions on called-in applications under section 77 of the TCP Act (planning), appeals under section 78 (planning) may be challenged under this section. Any person aggrieved by the decision may question the validity of the decision on the grounds that it is not within the powers of the Act or that any of the relevant requirements have not been complied with in relation to the decision. An application under this section must be made within six weeks from the date of the decision.

#### **SECTION 2: AWARDS OF COSTS**

There is no statutory provision for challenging the decision on an application for an award of costs. The procedure is to make an application for Judicial Review.

#### **SECTION 3: INSPECTION OF DOCUMENTS**

Where an inquiry or hearing has been held any person who is entitled to be notified of the decision has a statutory right to view the documents, photographs and plans listed in the appendix to the report of the Inspector's report of the inquiry or hearing within 6 weeks of the date of the decision. If you are such a person and you wish to view the documents you should get in touch with the office at the address from which the decision was issued, as shown on the letterhead on the decision letter, quoting the reference number and stating the day and time you wish to visit. At least 3 days notice should be given, if possible.

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