

CHAPTER 5: LANDSCAPE AND VISUAL ASSESSMENT

INTRODUCTION

- 5.1 This Landscape and Visual Impact Assessment (LVIA) has been prepared by Gavin David and David Hope of WSP on behalf of Ecotricity as part of an addendum to the original Environmental Impact Assessment (EIA). The Addendum is in support of an application to vary a consent which has been granted under section 36 of the Electricity Act 1989 for the Heckington Fen Wind Park with deemed consent under s.90 of the Town and Country Planning Act 1990 (**12.04.09.04/31C**). Gavin authored Chapter 5: Landscape and Visual submitted with the 2011 Environmental Statement (ES) and gave evidence at the subsequent planning inquiry.
- 5.2 The consented Heckington Fen Wind Park site (the Site) is located midway between the settlements of Sleaford and Boston, roughly 20km inland from the coast at the Wash (see **Figure 5.1: LVIA Study Areas with ZTV and Photomontage Viewpoint Locations**). The land holding occupies approximately 604 hectares of agricultural land north of East Heckington and the A17 and A1121.
- 5.3 This chapter of the Addendum assesses the landscape and visual effects of the proposed minor amendments to the consented Heckington Fen Wind Park. It generally uses the same baseline data and broadly follows the same approach as detailed in Chapter 5: Landscape and Visual of the original ES. The exception to this is the adoption of the updated best practice guidelines for LVIA from 2013; known as GLVIA 3 (see below). The assessment considers a number of changes to the consented scheme, as outlined in paragraph 5.20 below.
- 5.4 **Chapter 3: Details of the Variation** provides further details of these amendments.
- 5.5 The proposed amendment to the maximum rotor diameter is due to rapidly improving wind turbine technology which would allow the Applicant to maximise renewable energy generation on the site. The maximum blade-tip height will remain the same at 125 metres; however the lower blade sweep would be reduced from 35m to down to 23.5m. As described in **Chapter 3**, three candidate turbines are considered for this Environmental Statement, all with very similar physical characteristics. For the landscape and visual impact assessment purposes, the GE-103 turbine has been used as this turbine represents the largest rotor diameter at 103m.

METHODOLOGY

Assessment Method

- 5.6 The methodology used to carry out this LVIA addendum is the same as that detailed in Chapter 5: Landscape and Visual of the original ES. This has been undertaken in accordance with the following:
- Landscape Institute and Institute of Environmental Management and Assessment (2013) 'Guidelines for Landscape and Visual Impact Assessment 3rd Edition' (GLVIA 3);
 - Countryside Agency and Scottish Natural Heritage (2002) 'Landscape Character Assessment Guidance for England and Scotland'; and
 - University of Newcastle for Scottish Natural Heritage (2002) 'Visual Assessment of Windfarms: Best Practice'

- 5.7 Since the submission of the original ES, the 'Guidelines for Landscape and Visual Impact Assessment' have been updated from the 2nd Edition (GLVIA 2) to the 3rd edition (GLVIA 3). This resulted in a number of subtle changes in approach, which are summarised below.

- 5.8 It is worth noting, however, that the LVIA for the original ES was carried out using principles and practice largely in line with the subsequent GLVIA 3 guidance. The pertinent changes are outlined below.

GLVIA 3

Context

- 5.9 Since the publication of GLVIA 2, the UK has ratified the European Landscape Convention (ELC). The ELC is designed to achieve improved approaches to the planning, management and protection of landscapes throughout Europe and to put people at the heart of the process. The recognition that the government has given to landscape matters thus raises the profile of this important area. The ELC defines landscape as "*an area, as perceived by people, whose character is the result of the action and interaction of natural and / or human factors*" (GLVIA 3, P14). GLVIA 3 advocates the adoption of this broad and inclusive definition of landscape.

Philosophy

- 5.10 GLVIA 3 provides a steer on principles for LVIA where consensus (methods/techniques) exists and provides a framework for conducting LVIA, but at the same time stresses that the framework is not intended to be prescriptive and that professional judgement should be used: "*Professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters, for example the number of trees lost to construction of a new mine, much of the assessment must rely on qualitative judgements, for example about what effects the introduction of a new development or land use change may have on visual amenity, or about the significance of change in the character of the landscape and whether it is positive or negative*" (GLVIA3, paragraph 2.23, page 21). This is intended to help to ensure that judgements are clear and transparent.
- 5.11 In terms of communication, GLVIA3 also stresses the importance of having a well-argued narrative text to make clear what the significant issues and effects are. Tables and matrices, it says, should support this text rather than being relied upon to too great a degree.
- 5.12 The guidance also places great stress on the need for an LVIA to adopt "*...a reasonable approach which is proportional to the scale and nature of the proposed development*" (GLVIA 3, p 98). This accords with the EIA directive and UK regulations which require projects to be assessed for the 'significance' of their likely effects, not just the identification and description of those effects.

Structure and Content

- 5.13 GLVIA 3 places an emphasis on the distinction between 'Landscape Effects' and 'Visual Effects', and states that the role of LVIA is to "*...address both effects on landscape as a resource in its own right and effects on views and visual amenity*" (GLVIA3, paragraph 2.18, page 19).

Terminology

- 5.14 GLVIA 3 also provides guidance on what terminology an LVIA should adopt, in particular on the use of 'impact' and 'effect':

“This guidance generally distinguishes between the ‘impact’, defined as the action being taken, and the ‘effect’, defined as the change resulting from that action, and recommends that the terms should be used consistently in this way.” (GLVIA3, paragraph 1.15, page 9)

5.15 This Addendum has been carried out in accordance with the principles contained within GLVIA 3.

Nature of Landscape and Visual Effects

5.16 In the original ES LVIA it was assumed that the default position regarding judgements on whether residual landscape and visual effects were positive, negative or neutral was *adverse*, and further that effects identified in the assessment would be adverse unless stated otherwise. This reflects the possibility that, although change to landscape character and visual amenity may be perceived by some people as positive, negative or neutral, a particular change such as the one proposed (wind turbines in the countryside) can also be inconsistent with planning policy, which seeks to maintain the status quo in landscape and visual terms. This distinction between a) how effects are perceived by people, and b) the landscape planning policy aspect, was incorporated into Table 5.10 Summary of Significant Landscape and Visual Effects of the ES LVIA.

5.17 In the interests of clarity the same position has been adopted in this Addendum LVIA. However, it should be noted that, in summarising the predicted significant effects at the end of this Addendum LVIA (see **Table 5.3 Summary of Significant Landscape and Visual Effects**) the above distinction has been brought together into one column under a single combined heading. It should be stressed this change has been made to simplify the summary table and avoid confusion; it does not alter any of the assessment findings. This approach is in keeping with the updated best practice guidance on landscape and visual assessment (GLVIA3).

Purpose and Scope of Assessment

5.18 The purpose of this assessment is to identify potential significant landscape and visual effects resulting from the amendment to the original design as assessed in the 2011 LVIA. This will focus on those potential ‘additional’ effects of the proposed amendments. However, any additional effects will also be considered in ‘accumulation’ with the original assessment.

5.19 For this purpose a study area has been defined by a 5km radius from the Site (see **Figure 5.2: 2015 Variation of Consent LVIA Study Area with ZTV and Photomontage Viewpoint Locations**). Considering the small-scale nature of the proposed amendments and the nature of the baseline landscape characteristics, the 5km study area is considered proportional and adequately large enough to capture all potential significant landscape and visual effects.

5.20 The following assessment scope for the landscape and visual component of the Addendum has been agreed with the Local Planning Authority’s Planning Officer, Alan Oliver (North Kesteven District Council):

- Provide a concise landscape and visual statement forming part of ES Addendum covering the salient issues in accordance with current best practice (GLVIA3);
- 5km study area for potential landscape and visual effects including residential visual amenity with a focus on key adjacent properties and settlements;
- 20km study area for cumulative impacts to include key wind energy schemes in planning – no additional viewpoints / visualisations required over and above those specified below;

- Provide an overview of the current planning policy context relevant to landscape and visual issues focussing on any changes since the original consent with reference to the NPPF and planning practice guidance;
- Include 6 of the original ES viewpoints (Viewpoints 1-6) located within approximately 5km of the site for landscape and visual assessment purposes;
- Provide 6 comparative photomontages for Viewpoints 1-6 showing the approved development and proposed variation plus the relevant cumulative schemes using the original baseline photography and visualisation methodology; and
- Include a wireframe of proposed substation as a maximum development envelope on the photomontages.

Consultation

5.21 The consultation undertaken as part of the assessment is summarised below.

Table 5.1: Summary of consultation

Body/ organisation	Individual/s at body / organisation	Meeting dates and other forms of consultation	Summary of outcome of discussions
North Kesteven District Council	Alan Oliver	Telephone conversation on 05 /11/2014 between Gavin David and later confirmed by email dated 16/12/2014	Agreed the scope of the Addendum assessment as set out above.
Boston Borough Council	Trevor Thompson	Gavin David email dated 16/12/2014	Provision of consultation information only – response pending at time of submission.
Natural England	Elizabeth Newman	Gavin David email dated 15/12/2014	Response from Ryan Hildred (new lead on this project), agreeing with the scope and approach suggested.

Description of Amendments

5.22 A variation of consent is sought for the construction and operation of a wind turbine generating station on land at Six Hundred Farm, Six Hundred Drove, East Heckington, Lincolnshire ("the Development") (DECC ref: 12.04.09.04/31C). The amendments sought to the Development relevant to this assessment are:

- *Amending the onsite access track along two sections within the Development Site and an allowance for micro-siting as set out in **Figure 3.1**;*
- *Relocating and increasing the footprint of the onsite substation, including relocating the temporary construction compound to an area of existing hardstanding, providing temporary auxiliary crane pad areas and an underground cabling corridor from the turbines to the onsite substation as set out in **Figure 3.1**; and,*

- *Amending the turbine rotor diameter from 90m, as indicated on the consented Site Edged Red plan (4038_A0085_03), to a maximum rotor diameter of up to 103m and a 10 metre radius micro-siting allowance around each turbine location where onsite constraints allow as set out in Figure 3.1.*

Site Visit

- 5.23 In order to assess these variations, an additional site visit was conducted on 19 December 2014. This involved capturing up-to-date baseline photography from the six selected viewpoints (viewpoints 1, 2, 3, 4, 5 and 6) in order to analyse any changes which may have occurred to the baseline since the original ES was published.
- 5.24 The site visit established that the baseline has not changed materially, and that the descriptions presented in Chapter 5: Landscape and Visual of the original ES are a fair and accurate description of the current baseline conditions.

BASELINE

Planning Policy Context

- 5.25 The following section provides a review of planning policy relevant to wind energy and landscape within the 5km study area. This focuses on changes since the original application. For a more complete policy review refer to Chapter 5: Landscape and Visual within the original ES.
- 5.26 Since the original ES was published a number of changes have occurred within the UK planning system. A number of National Policy Statements on Energy Infrastructure have been designated since the original ES was published. The statements were designated in July 2011 and outline the Government's objectives for development of nationally significant infrastructure. Their relevance to this assessment is summarised below.
- 5.27 The government published the National Planning Policy Framework (NPPF)¹ on 27 March 2012, which gives guidance to local councils in drawing up local plans and on making decisions on planning applications.
- 5.28 The Coalition Government announced the revocation of Regional Spatial Strategies (RSS) on 6 July 2010. This means that the East Midlands RSS 2006-2026 (RSS-2009) is no longer relevant, along with the Lincolnshire Structure Plan. The coalition government has therefore effectively introduced a two-tier planning system whereby the NPPF informs the development of local development plans/frameworks.

National Planning Policy

Overarching National Policy Statement for Energy (EN-1)

- EN-12 explains the role of renewable electricity generation in helping the UK tackle climate change, in reducing emissions of carbon dioxide, in meeting the anticipated future growth in demand for electricity and in protecting consumers against the volatility and increasing cost of fossil fuels. Paragraph 3.4.3 states that onshore wind projects are a key future source of renewable energy and that it is 'the most well-established and currently the most economically

viable source of renewable electricity available for future large-scale deployment in the UK'. Paragraph 3.7.1 goes on to explain that many wind farms will need to be located in places where there is no existing network infrastructure.

- Section 5.9 of EN-1 deals specifically with generic landscape and visual issues associated with infrastructural energy projects. Paragraph 5.9.8 states that: 'virtually all nationally significant energy infrastructure projects will have effects on the landscape' and that projects should be designed with regard to potential impacts on the landscape. Similarly, paragraph 5.9.18 says that 'All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites'.

National Policy Statement for Renewable Energy Infrastructure (EN-3)

- Section 2.7 of EN-3³ deals specifically with Onshore Wind projects. Paragraph 2.7.48 describes the likely scale of wind turbines and echoes EN-1 in saying that '*Modern onshore wind turbines that are used in commercial wind farms are large structures and there will always be significant landscape and visual effects from their construction and operation for a number of kilometres around a site*'. Paragraph 2.7.49 goes on to say that the arrangement of the turbines should be carefully designed to minimize these effects whilst meeting technical and operational requirements. On the subject of mitigation Paragraph 2.7.51 states that '*It is unlikely that either the number or scale of wind turbines can be changed without significantly affecting the electricity generating output of the wind farm. Therefore, mitigation in the form of reduction in scale may not be feasible*'.

National Planning Policy Framework

- 5.29 The following paragraphs/policies within the NPPF are considered relevant to this assessment:

- Section 11 states that the planning system should aim to conserve and enhance the natural and local environment in part through the protection of valued landscapes. Local Planning Authorities (LPAs) should therefore, '*set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged*' (Section 11, Paragraph 113, pp26);
- LPAs should, '*set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure*' (Section 11, Paragraph 114, pp26). Strategic priorities should also include policies to conserve and enhance landscapes;
- The NPPF identifies that impacts of climate change should be considered in terms of changes to biodiversity and landscape and that '*great weight*' should be given to, '*conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty*' (Section 11, Paragraph 115, pp26);
- In relation to heritage assets, the Government's objective is for Local Authorities to create policies that promote conservation and enjoyment of the historic environment, taking into account, '*the desirability of new development making a positive contribution to local character*'.

¹ Department for Communities and Local Government (2012) National Planning Policy Framework

² Department of Energy & Climate Change (2011) Overarching National Policy Statement for Energy (EN-1)

³ Department of Energy & Climate Change (2011) National Policy Statement for Renewable Energy Infrastructure (EN-3)

and distinctiveness; and opportunities to draw on the contribution made by the historic environment to the character of a place' (Section 12, Paragraph 126, pp30);

- In determining applications, the NPPF states that LPAs should, 'require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting' (Section 12, Paragraph 128, pp30) and, 'where appropriate, landscape character assessments should also be prepared, integrated with assessment of historic landscape character, and for areas where there are major expansion options assessments of landscape sensitivity' ('Plan Making' Section, Paragraph 170, pp41); and
- Section 10 relates to meeting the challenge of climate change and states LPAs should 'adopt proactive strategies to mitigate and adapt to climate change' (Section 10, Paragraph 94, pp22), and states that local planning authorities should, amongst other things, 'consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources' (Section 10, Paragraph 97, pp22).

National Planning Practice Guidance (NPPG)

5.30 The National Planning Practice Guidance (NPPG) was published in March 2014 and formally revoked more than 150 planning guidance documents. The NPPG provides revised and updated planning practice guidance to replace the revoked planning guidance documents in order to make planning policy and the NPPF more accessible. The key guidance provided in the NPPG in relation to this chapter includes the following:

- NPPG Guidance Section: Natural Environment⁴ – Landscape. Paragraph: 001 Reference ID: 8-001-20140306. This section states that, 'One of the core principles in the National Planning Policy Framework is that planning should recognise the intrinsic character and beauty of the countryside. Local plans should include strategic policies for the conservation and enhancement of the natural environment, including landscape. This includes designated landscapes but also the wider countryside.'

Local Planning Policy

- 5.31 The Local Planning Authority (LPA) boundaries are shown in Figure 5.1: Site Location and Study Area of the original ES. The application site is located within the jurisdiction of North Kesteven District Council, with parts of the 5km study area lying within the jurisdiction of Boston Borough Council.
- 5.32 Planning authorities, under the direction of the Planning and Compulsory Purchase Act 2004, are in the process of preparing Local Development Frameworks (LDF) that will replace those policies within Local Plans and Structure Plans. Those policies that have been 'saved' in the transition to the LDF have been considered.
- 5.33 The North Kesteven District Local Plan expired 21 September 2010 and will be replaced by the Central Lincolnshire Local Plan (to be produced by Central Lincolnshire Joint Strategic Planning Committee (CLJSPC)). The Central Lincolnshire Local Plan is due to be adopted towards the end of 2016. Therefore, until that time the North Kesteven District Local Plan, of which all policies are saved, remains the currently adopted plan. A review of this is presented within Chapter 5: Landscape and Visual of the original ES.

⁴ Department for Communities and Local Government (2014) Natural environment

- 5.34 On 5th July 2011, the South-east Lincolnshire Joint Strategic Planning Committee Order 2011 came into force, creating the South-east Lincolnshire Joint Strategic Planning Committee. This is a new, separate, statutory local planning authority covering Boston Borough and South Holland District, which will be responsible for the production of a new local plan for the area. Until the adoption of the new local plan in 2016 the Boston Borough Local Plan 1999, along with the Boston Borough Interim Plan (Non-Statutory Development Control Policy) 2006, remains the currently adopted plan. A review of this is presented within Chapter 5: Landscape and Visual of the original ES.

Description of the Site and Surrounding Area

- 5.35 The landholding at East Heckington consists of predominantly arable farmland delineated by ditches and drains, with occasional remnant native species hedgerows and a few small farm woodland blocks. The site boundary is approximately 604 ha, occupying level ground, lying at around 2m Above Ordnance Datum (AOD); the site area measures 21ha.
- 5.36 The immediate context of the site comprises flat fenland. **Photomontages 2, 4, and 6** within **Figure 5.3: Photomontages and Wirelines** illustrate the landscape context and characteristics of the site and surrounding area.
- 5.37 The local landscape is large scale and relatively uniform in character, reflecting the intensive agriculture land use of the fens, and its flat, expansive landform (see Figure 5.3: Topography of the original ES). The lowland location, level topography and relative homogeneity of landscape elements – large arable fields under broad skies, punctuated occasionally by farm woodlands, settlement and electricity infrastructure – give the fenland its distinctive sense of place.
- 5.38 Visually the fenland landscape is open, affording broad vistas and long views. Visibility towards / across the application site is extensive from the surrounding fens and adjacent gently sloping ground, but views are limited locally by topographical variations, woodland / tree cover, occasional hedgerows and settlement / buildings, as for example occurs at East Heckington adjacent to the land holding (see **Viewpoint 2**).

Landscape Character and Value

National Character Units

- 5.39 The Site lies entirely within The Fens National Character Area (NCA 46). The 5km study area lies almost entirely within The Fens NCA with a small area to the east falling within the adjacent Southern Lincolnshire Edge (NCA 47). Natural England updated the National Character Area Profile for NCA 46⁵ on 26 March 2013 and for NCA 47⁶ in April 2014. Based on the updated documents, the character of the areas is summarised below.

The Fens (NCA 46)

- 5.40 This is a distinctive, historic and human influenced wetland landscape lying to the west of the Wash estuary, which formerly constituted the largest wetland area in England. The key characteristics of the area are as follows:

⁵ Natural England (2014) National Character Area Profile: 46 The Fens

⁶ Natural England (2014) National Character Area Profile: 47 Southern Lincolnshire Edge

- A large-scale, low-lying, flat, open landscape with extensive vistas to level horizons and huge skies;
 - A hierarchy of river drains and ditches provide a strong influence throughout the area;
 - Drainage from the 17th century presented valuable soils which provide conditions conducive to large-scale arable agriculture;
 - Embanked rivers and roddons create local enclosure;
 - Area south of Lincolnshire Wolds is the most recently drained with the Wolds providing a marked 'Upland' horizon to north;
 - The Wash is the largest estuarine system in Britain, supporting internationally important intertidal and coastal habitats;
 - Overall, woodland cover is sparse, with only a few small woodland blocks, occasional avenues alongside roads, isolated field trees and shelterbelts of poplar, willow and occasionally leylandii hedges; and
 - Large, built structures exhibit a strong vertical visual influence, e.g. 'Boston Stump' (St Botolph's Church), Ely Cathedral, wind farms and other modern large-scale industrial and agricultural buildings.
- 5.41 The site lies in the north-western part of the character area (see Figure 5.6a of the original ES). The lowland area of The Fens NCA is defined by a subtle transition from the gently undulating landform of the Kesteven Uplands NCA to the west, and bounded to the north-east by the upland horizon of the Lincolnshire Wolds NCA. The low-lying, flat relief is an entirely man made landscape which, although sparsely settled, contains prominent built development in the form of power lines and large agricultural buildings in addition to dispersed farmsteads and dwellings.
- 5.42 Regarding the influence of development and transport infrastructure on countryside character locally, the national character area description states on page 10-11 that:
- 'The medieval pattern of north-south drove lines, between parent and daughter settlements on coast and fen edge respectively, was crossed in the 19th century by the A17 and A47. Since then the settlements in these Townlands have spread along these principal routes to create ribbon developments of smallholdings, modern bungalows, large agricultural barns and food processing buildings'*
- 5.43 The proposal would theoretically be visible across the majority of The Fens National Character Area at varying distances. The pattern of visibility is interrupted by large settlements such as Boston to the east and Spalding to the south, and would be further fragmented with distance due to the screening effect of surface objects in a flat landscape. Consequently, in practice the extent of visibility would be less than indicated on **Figure 5.1** and **Figure 5.2**.
- Southern Lincolnshire Edge (NCA 47)*
- 5.44 This is an area of clear character defined by the dramatic limestone cliff to the west and the dip slope that drops gently away to the edge of the fens in the east. The key characteristics of this area are as follows:
- Large scale 'upland' arable escarpment broadly divided into north and south by the River Witham at Lincoln;
 - Prominent scarp slope of Lincoln 'Cliff' marks western edge of area;
 - An open landscape with far-reaching views over the Trent and Belvoir Vales and up to Lincoln Cathedral;
 - On the free draining higher ground, land cover is primarily arable organised in large geometric fields divided by limestone walls, with few trees or woodland; and
 - On the wetter, heavier clay soils to the east and south-west, pasture is more prevalent with hedgerows being the predominant boundaries.
- 5.45 The Southern Lincolnshire Edge landscape character area is situated directly to the west of the Site, approximately half of which falls within an irregular pattern of visibility that gradually disperses westward, reflective of the undulating topography of the upland plateau. The dramatic change in topography of the Lincoln Cliff scarp slope defines the limit of visibility further west.
- Local Character Units**
- 5.46 The study area extends over two local landscape character areas: The Fens – Fenland (13), identified within the North Kesteven Landscape Character Assessment (2007); and Holland Black Fen (A1), identified within the Landscape Character Assessment of Boston Borough (2009). The Development Site itself is located entirely within the former. The detailed baseline descriptions for these local character areas are contained within Chapter 5: Landscape and Visual of the original ES, with a summary provided below. Note that these two local character units are very similar (the main difference being administrative) with both displaying the same underlying fenland character.
- The Fens – Fenland (13)*
- 5.47 The Site lies on the eastern boundary of 'The Fens' landscape character type as defined in the North Kesteven District Landscape Character Assessment. This local character type is a homogenous unit very similar to the corresponding Fens national character unit (NCA 46) as described by Natural England. It comprises one sub-area – Fenland which has the following key characteristics:
- Low lying with very flat relief;
 - Occasional small islands of slightly higher land;
 - Very large, rich arable fields divided up by drainage channels;
 - A hierarchy of rivers drains and ditches creating linear patterns across the landscape;
 - The geometric road pattern follows the drainage pattern with small roads raised above the level of the fields;
 - Generally extensive vistas to level horizons and huge skies;
 - Sparse woodland cover with some occasional trees;
 - Intensively farmed and managed it is almost entirely a man-made landscape;
 - Except for scattered farmsteads and farm buildings the sub-area is unsettled; and
 - Prominent power lines and large-scale agricultural buildings.
- 5.48 The character unit is predominantly man-made being reclaimed land laid out and maintained with a rectilinear structure of drains / ditches and roads. In addition to the underlying contemporary

agricultural landscape, the large scale field pattern and scattered farmsteads with conspicuous farm buildings, there are a number of developed features which characterise the area and form prominent visual elements including:

- A roads and associated infrastructure and traffic;
- 400 kV electricity transmission lines and pylons; and
- Large scale drainage channels / canals.

5.49 These 'man-made' elements give 'The Fens – Fenland' character unit and the surrounding landscape a partially 'developed' character which assists the area in accommodating a wind energy development of the type and scale proposed (see Photomontages 1, 2 and 16 of the original ES). This matter is dealt with further in the Evaluation of Landscape and Visual Environment section below.

Reclaimed Fens – Holland Black Fen (A1)

5.50 The study area falls within the western boundary of the Reclaimed Fen landscape character type as defined within the Landscape Character Assessment of Boston District (2009). This is an open landscape with big skies and long distance views to the Lincolnshire Wolds in the north. The landscape is evidently man-made with the regular, geometric pattern and grain defined by the large water-filled drains, dykes, and canalised rivers that cut across the character areas. It comprises one sub-area – Holland Black Fen which has the following key characteristics:

- Flat and low-lying reclaimed fenland;
- Open and expansive views with big skies and dark night skies with some views semi-enclosed at ground level by large embankments;
- More distant views to Boston Stump and to the Lincolnshire Wolds in East Lindsey District to the north;
- A man-made intensive arable landscape laid out in a regular, geometric pattern with narrow roads and trackways alongside drains, dykes and ditches;
- The large North Forty Foot Drain and South Forty Foot Drain are key dominating features of the area;
- Field boundaries are typically open with wet ditches, dykes and drains and the occasional hedgerow;
- Occasional large scale horticultural glasshouses and packing or processing plants occur near the southern boundary of the area;
- Sparsely populated with occasional small hamlets, scattered farmsteads, and occasional rows of former workers' cottages;
- Occasional derelict farm cottages and field buildings;
- Sparse tree cover confined to shelterbelts, with occasional hedgerows and small blocks of mixed woodland with shrubby edges;
- Bicker Fen wind farm and large scale pylons on the south-western tip are modern landmark features; and
- A semi-remote, tranquil and intact working agricultural landscape.

Landscape Value

Valued Landscapes

5.51 Valued landscapes are those areas of land, identified in development plans, designated for their special landscape or scenic qualities. There are no designated landscapes within the 5km study area. However, the wider study area, as employed in the LVIA for the original ES, identified a range of 'valued' landscapes in addition to a number of historic / designed landscape areas. These are shown on Figure 5.5: Landscape Planning Context of the original ES.

5.52 It is worth noting that the closest Area of Outstanding Natural Beauty (AONB) is the Lincolnshire Wolds, located approximately 20km to the north-east of the application site.

Visual Environment

Public Access, Recreation Resources and Places of Interest

5.53 There are a range of landscape and recreation resources and places of interest in the 5km study area. These include recreational trails and public rights of way, places of interest/landmarks, land with public access, public highways and navigable waterways. The following are located within the 5km study area:

- **National Cycle Route 1**, passing within approximately 4km of the Site near Holland Fen;
- No Local Public Rights of Way (PRoW) cross the application Site, however a number cross the 5km study area. These are organised into quadrants as illustrated on Figure 5.4 of the original ES. These are:
 - NW Quadrant (South Kyme): **Heck/15/1**, **SKym/3/1**, **Skym/2/1** and **Heck/12/1**.
 - NE Quadrant (Amber Hill): **Ambe/4/1**, **Ambe/3/1**, **Ambe/2/1** and **Kirt/12/1**.
 - SE Quadrant (Swineshead Bridge): **Swhd/13/1**, **Swhd/14/1**, **Swhd/16/1** and **Ambe/8/1**; and **Swhd/15/2** and **Swhd/15/1**.
 - SW Quadrant (Heckington / Great Hale): **GtHa/cs/1** and **Heck/3/1**.
- **Kyme Tower** and **South Kyme Golf Club** located in South Kyme, approximately 4km from the Site, are both publically accessible and therefore considered visual receptors. In addition, Kyme Tower is a landmark feature and therefore makes a contribution to landscape character. **Viewpoint 6** is representative of views from South Kyme;
- Public Open Space (POS) at **Amber Hill - Amber Hill / Toftstead Primary School playing fields**, **South Kyme – St Mary and All Saints churchyard** and **Holland Fen – recreation area / playing fields**;
- The **A17**, **A1121**, the **B1395/Sidebar lane**, **Claydyke Bank / Maryland Bank** and **Sutterton Drove** represent the public highways which run through the study area; and
- The **River Witham**, navigable from the Wash up to Woodhall Spa, runs on the north-east edge of the 5km study area.

5.54 These receptors are represented by a range of views, as outlined below.

5.55 Six viewpoints within the 5km study area have been selected, in consultation with North Kesteven District Council, to provide a range of viewpoints, and, in particular, to assess the effect of the

proposed amendments on residential visual amenity from key adjacent properties and settlements. These locations are considered the most likely from which the proposed amendments will be discernible. Beyond approximately 5km the proposed changes are unlikely to be discernible to all but the trained eye.

5.56 The photomontages and accompanying wirelines for the selected viewpoints are presented in **Figure 5.3: Photomontages and Wirelines**.

5.57 The visual baseline for these receptors is as described in the original ES, a summary of which is provided below::

- **Viewpoint 1 - Mill Green Farm, off Clay Bank.** View looking south across the application site from the public footpath (Skym/3/1) near the farmhouse. The flat, open fenland extends southwards towards East Heckington, which forms an irregular skyline of buildings and associated planting, articulated by overhead power lines and Bicker Fen Wind Farm. Otherwise the large scale and homogeneity of the Fens (NCA 46) / Fenland (NKDC LCA 13) landscape predominates.
- **Viewpoint 2 - East Heckington, A17.** View from the A17 at East Heckington looking north across the site, representative of those residential properties in the village with uninterrupted northward views. The flat, open fenland (NCA 46: The Fens / NKDC LCA 13: Fenland) extends northwards displaying its key characteristics of large, open arable fields with little tree or hedgerow cover, under huge skies.
- **Viewpoint 3 - Glebe Farm, Sidebar Lane.** A similar view to others immediately surrounding the site at this distance (1km approx), representative of those from dwellings on Sidebar Lane. Characteristic fragments of native species hedge are visible, set within the flat, open fenland (NCA 46: The Fens / NKDC LCA 13: Fenland), evidence of the geometric field pattern created by the network of ditches, dykes and occasional boundary hedgerow.
- **Viewpoint 4 - Amber Hill, Sutterton Drove.** View looking south-west from Amber Hill, near the hamlet. The openness of the level fenland is interrupted by one of the few intact hedgerows extant locally, visible on the skyline, framed by tree planting and enclosed buildings at the extremities of the vista. Apart from these characteristic upstanding features, the large scale and homogeneity of the Fens (NCA 46) / Holland Reclaimed Fen (BDC LCA A1) landscape prevails. Potential views of Bicker Fen Wind Farm are blocked by the shelter belt on the left hand side of the frame.
- **Viewpoint 5 - Swineshead Bridge, A17/A1121.** View from the A17 at Swineshead Bridge is broadly representative of those from residential properties in the village. The open fenland is punctuated by sporadic tree and hedge planting typical of that enclosing local settlement. Notwithstanding these characteristic upstanding features and the main road with its lighting / signage infrastructure, the large scale nature and simple elements and patterns so distinctive of the Fens (NCA 46) / Holland Reclaimed Fen (BDC LCA A1) still defines the character of the landscape.
- **Viewpoint 6 - South Kyme.** A southward view from Cow Drove looking across the broad, level fenland (NCA 46: The Fens / NKDC LCA 13: Fenland), representative of the prospect from dwellings at the southern edge of South Kyme. Several woodland blocks in the middle

ground break up the open vista to produce a varied skyline punctuated by occasional tree and hedge planting and built elements including Bicker Fen Wind Farm.

EVALUATION OF LANDSCAPE AND VISUAL EFFECTS

Landscape Sensitivity

5.58 To establish landscape sensitivity and understand the nature of effects it is necessary to consider the development in context. Landscape receptors need to be assessed by '*combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape.*' (GLVIA 3, paragraph 5.39, pp 88). Susceptibility to change means '*the ability of the landscape receptor...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.*' (GLVIA 3, paragraph 5.40, pp 88-89).

5.59 As part of the original ES a project-specific landscape sensitivity study was undertaken. This evaluated the landscape using the following criteria (adapted from Natural England's guidance on: 'Assessing the Environmental Capacity for On-Shore Wind Energy Development' – Consultation Draft (July 2009)):

- Scale;
- Landform;
- Land Cover;
- Human Influence;
- Skylines and Settings;
- Visibility and Views;
- Landscape Quality (condition);
- Scenic Quality;
- Wildness and Tranquillity;
- Historic Environment;
- Cultural Associations; and
- Amenity and Recreation.

5.60 These attributes of landscape were analysed to give an overall landscape sensitivity and capacity for the application Site and the host landscape character units based on a three-point scale of: low, medium and high.

5.61 As the overall character of the baseline has not changed since the original ES, and the nature of the development is the same as that originally assessed, the sensitivity of the landscape and visual receptors is as presented in Chapter 5: Landscape and Visual of the original ES.

ASSESSMENT OF LANDSCAPE AND VISUAL EFFECTS

- 5.62 This section assesses the landscape and visual effects of the proposed minor amendments to the Heckington Fen Wind Park. The findings from the original ES are reviewed, followed by an assessment of the changes in level of effect, if any, that would result from the proposed amendments.
- 5.63 It is worth noting that due to the minor nature of the changes, the assessment results from the original ES will not change for all identified receptors.
- 5.64 As there is no anticipated change during construction or during night-time operation, the effects will be as described in the original ES (Chapter 5: Landscape and Visual).

Landscape Effects

Site Landscape/Features

- 5.65 A number of impacts were identified for the original scheme, including the following:
- 5.66 **Turbine Installation** - A typical foundation for a turbine of 3MW in size is approximately 16.2m x 16.2m. Upon completion of the works only the base of the turbine tower is visible with the remainder of the base being allowed for grass over with an appropriate seed mix. The permanent loss of arable land would amount to approximately 30m² per turbine.
- 5.67 The turbine installation procedure for the amended scheme is anticipated to be as described for the original scheme. The indicative foundation is likely to be similar for the three candidate turbines put forward as part of this Variation of Consent application. Therefore the overall impact of the turbine installation would remain as described in the original ES.
- 5.68 **Temporary Hard-standing** - To install the turbines it would be necessary to lay down temporary hard-standing pads measuring approximately 40m by 20m beside each turbine base to support cranes. It is possible that auxiliary crane pads may also be required, depending on the final turbine choice. Together, the temporary hard-standing would require the removal of roughly 22,283m² of arable crop during construction, together with the stripping and temporary storage of associated topsoil. The hard-standing areas would be retained and allowed to grass over following construction.
- 5.69 The temporary hard-standing pads are anticipated to be as described for the original scheme, however the possibility of auxiliary crane pads is also considered within the site layout. Given the relatively small change in the nature of the temporary hard-standing areas, the overall impact of the temporary hard-standing is considered to remain as reported in the original ES.
- 5.70 **Access Tracks** - A 5.5m wide access track linking the turbine positions would be required with a total length of about 10.4km. On bends the width of the access track increases to 6.5m. This would result in the loss of around 61,750m² of arable land which would be replaced by a 5.5m/6.5m wide aggregate track which would be allowed to grass over during the operational phase. The track would be aligned to protect field boundaries, hedgerows and trees in order to avoid /minimise potential impacts on the site landscape; where possible, the onsite access track has followed existing farm tracks. The length of field boundary and / or ditch which would need to be removed / modified to facilitate access during construction has been significantly reduced in this application. Eleven temporary turning heads have been designed in the site layout to facilitate the construction

phase and to reduce the area taken to modify access over ditches. Several bridging points across ditches will still require culverts; however these would be much reduced in length as a result.

- 5.71 The amended scheme requires the re-routing of two sections of access track. This includes the re-routing of approximately 1.5km of access track on the east of the Site to an existing farm track to the south-west of the Site. Overall, the new layout would slightly reduce the amount of arable land loss compared with that reported in the original ES.
- 5.72 This reduction in loss of arable land is not, however, sufficient to alter the findings of the original ES.
- 5.73 **Construction Compound**- A temporary construction compound will also be required to house machinery and materials. It would be sited away from landscape features such as field boundaries and mature vegetation. The construction compound would measure approximately 3,129m² and is to be located on an area of existing hard-standing in the centre of the site currently used to store agricultural machinery and hay/silage bales. A large pond of limited ecological value is located within this area. This pond will be left untouched, with the compound utilising the hard-standing area surrounding it. There will be no removal of arable and topsoil as proposed with the original location of the construction compound.
- 5.74 The relocation of the temporary construction compound to an area of existing hard-standing would slightly reduce the impact of the construction compounds described in the original ES, but would not be sufficient to alter the findings of the original ES.
- 5.75 **Substation** – As part of the original ES application, an onsite sub-station measuring up to 10m x 12m in plan and up to approximately 8m tall was consented adjacent to the A17, located near to the proposed site access point.
- 5.76 The amended scheme would involve relocating and increasing the footprint of the onsite substation. Following discussions with the District Network Operator (DNO) for the region, a 132kV substation will be required onsite measuring up to 47m by 55.5m and up to a maximum 8 metres in height. This would result in up to 3,640m² loss of arable land as opposed to 120m² as previously proposed. A small portion of the amended substation will be on existing hardstanding currently used to store hay/silage bales. An illustration and representative photographs of the proposed substation are provided in **Chapter 3 – Figures 3.6, 3.7 and 3.8**.
- 5.77 Due to the increase in overall size, it is now proposed that the substation is relocated to the south-east of the site, over 800m to the east of the consented sub-station. This would increase the distance from the nearest sensitive visual receptors on the A17 and at East Heckington from approximately 190m away to approximately 500m. In addition, intervening hedgerow and woodland vegetation would also restrict visibility of the structure and help assimilate the substation into the landscape. The proposed mitigation planting surrounding the substation, as shown on **Figure 3.6** in **Chapter 3**, would assist this further in the medium to long term.
- 5.78 Despite the increased size and additional land-take, and the relocation of the substation, it is considered that the overall impact would remain as reported in the original ES.
- 5.79 **Cabling** - All cabling would be in underground trenches measuring 0.6m wide x 1.2m deep, running adjacent to the access tracks. This would involve the temporary removal during construction of approximately 5,725m² of arable crop and associated topsoil.

- 5.80 The cabling installation procedure for the amended scheme is anticipated to be as described for the original scheme. Therefore the overall impact of the turbine installation would remain as described in the original ES.
- 5.81 **Grid Connection** - The 2011 ES proposed that the electricity produced would be exported via the onsite substation and an underground cable to a 33kV grid connection located at approximately 1km to the north-west of the site. No new overhead electricity pylons / poles and lines would be required.
- 5.82 Following further discussions with the DNO (Western Power Distribution), a new 132kV grid connection is required in order to distribute the electricity generated into the national grid network. The implications for the proposed 132kV onsite substation are detailed above. No new overhead electricity pylons / poles and lines would be required between the turbines and the onsite substation. A separate grid connection application is likely to be required to connect the Heckington Fen Wind Park to the existing Bicker Fen substation approximately 8km south of the proposed wind farm. The grid connection of the proposed scheme from the onsite substation to Bicker Fen is therefore outside the scope of this application.

Summary of Effects on Site Landscape / Features

- 5.83 Implementation of the consented wind park would result in the permanent loss of approximately 9.90 hectares of arable land to accommodate the turbines and associated infrastructure. An equivalent area of topsoil to a depth of about 340mm would need to be temporarily removed for storage and either replaced or redistributed across the farm with no net loss. Approximately 319 linear metres of ditch / field boundary would have to be permanently modified / bridged and culverted to accommodate the access tracks, although these would be allowed to grass over in the longer term. These losses represent a fraction (approximately 1.4% and 0.7% respectively) of the total site landscape resource. On balance, therefore, the wind park proposal would have a negligible / minor direct effect on the site landscape in the medium to long term which would be insignificant in EIA terms and would be reversible.
- 5.84 For the amended scheme the turbine installation would result in the permanent loss of approximately 8.37 hectares of arable land to accommodate the turbines and associated infrastructure (access tracks, crane pads and substation). This would represent a reduction of almost 20% in terms of permanent land take. This is mainly due to a reduction in the access track width where ditches are crossed, and replacing with temporary turning heads. Despite the reduction in overall permanent land take, it is anticipated that the amended scheme would be largely as described for the consented scheme, therefore no change in impact is anticipated. However, there will be some changes in design which would result in slight impact changes, as follows:
- The amended scheme requires the re-routing of two sections of access track. This includes the re-routing of approximately 1.5km of access track to an existing farm track to the south-west of the Site, which would slightly reduce the amount of arable land loss;
 - The amended scheme would involve the relocation of the temporary construction compound to an area of existing hard-standing. This would slightly reduce the impact of the construction compounds described in the original ES.
 - The amended scheme would involve relocating and increasing the footprint of the onsite substation. This would result in up to 3,640m² loss of arable land, although a small portion of the amended substation will be on existing hardstanding. The substation would be relocated to

the south-east of the site, approximately 500m to the north of visual receptors on the A17 and at East Heckington. Taking account of both the additional loss of arable land and the relocation away from the nearest sensitive receptors, the overall impact is considered to remain as reported in the original ES.

- 5.85 Considering the minor nature of the proposed amendments, notwithstanding that the overall land-take would be slightly less than the consented scheme, the overall level of physical landscape effects is considered to be as reported in the original ES.

National Character Units

The Fens (NCA 46)

- 5.86 The national character area covers the majority (80%) of the 5km study area and forms the landscape context of Boston Borough and to a lesser extent North Kesteven District. A small proportion of the NCA surrounding the site, within approximately 1.5-2km of the nearest consented turbine, would be changed to a wind farm landscape type or subtype, but the character of the wider landscape, which lies largely beyond the zone of characterising effects, would be relatively unaffected – **Photomontages 1 and 4** illustrate the diminishing characterising effect across the Fens with increasing distance from the application site.

- 5.87 The original ES concluded that since the nature of the effect would be direct but reversible the magnitude of change would be Low to Medium. This, combined with the Low to Medium sensitivity of the NCA, would result in a Minor to Moderate level of effect.

- 5.88 Considering the relatively minor changes proposed to the consented development, and the large scale of the landscape unit, it is considered that the level of effect would remain as **Minor to Moderate**.

Southern Lincolnshire Edge (NCA 47)

- 5.89 The character area runs broadly north – south, the closest parts of which are just over 2km to the west of the nearest consented wind turbine. Overall the NCA lies predominantly beyond the zone of characterising effects of the consented wind park. Furthermore, the closest part falls outside the area within which significant character effects are predicted to arise and therefore the NCA would be relatively unaffected characterwise.

- 5.90 The original ES concluded that since the nature of effect would be indirect and reversible the magnitude of change would be Very Low. This, combined with the Medium sensitivity of the NCA, would result in a Negligible to Minor level of effect.

- 5.91 Considering the distance from the Site (over 2km) and the relatively minor amendments proposed to the consented development, it is considered that the level of effect would remain reported in the ES – **Negligible to Minor**.

Local Character Units

The Fens – Fenland (13)/ Reclaimed Fens – Holland Black Fen (A1)

- 5.92 The potential character effect described above in relation to The Fens NCA would be replicated with respect to the host character unit(s) at the local level – The Fens – Fenland (North Kesteven District) and coterminous Holland Reclaimed Fen (Boston District). The level, open character

area(s) surrounding the site would be changed to a 'wind farm in fenland' landscape type up to approximately 1km from the nearest consented turbine and a 'fenland with wind farm' landscape sub-type up to around 1.5km. There will be pockets of landscape which would be changed to a lesser extent, in particular within East Heckington on Boston Road.

- 5.93 The original ES concluded that since the nature of effects would be direct but reversible the magnitude of change would be Low to Medium. This, combined with the Low to Medium sensitivity of the LCA, would result in a **Minor to Moderate** level of effect.
- 5.94 The proposed amendments for a turbine with an increased blade sweep but the same blade-tip / maximum height would not appreciably alter the predicted effect on local landscape character as reported in the original ES. The amended substation would result in an increased loss of arable farmland and the introduction of a larger infrastructure element. However, the substation would be relocated to the south-east of the site, away from the A17 and the nearest sensitive visual receptors at East Heckington. In addition, intervening hedgerow vegetation would help to reduce the visual intrusion of the structure within the landscape from the surrounding area. There would therefore be no change to level of character effects predicted in the original ES.

Summary of Landscape Character Effects

- 5.95 Taking account of the large scale of the existing fenland landscape, its man-made context and the nature of the changes proposed to the consented development, including the amended substation, it is considered that the level of effect on the character of the host landscape would remain as reported in the ES, namely **Minor to Moderate**.

Visual Effects

Residential Amenity

Viewpoint 1 - Mill Green Farm, off Clay Bank.

- 5.96 The consented wind park would be visible extending across approximately 85% of the 70 degree field of view, seen uninterrupted at close range. Taking into account the expansiveness of the Fens and big skies, the existing man-made landscape context and upstanding features, the magnitude of visual change at this exposed location is predicted to be high.
- 5.97 The original ES concluded that a High magnitude of change, alongside the High sensitivity of the receptor, would result in a Major to Moderate level of effect.
- 5.98 The relative proximity of the viewpoint (1.01 km) would result in some perceptible changes between the consented development and the proposed amended development due to the slightly increased rotor diameter (90m to 103m) and resulting lower blade sweep. In addition, the proposed mitigation planting around the relocated substation proposal would assimilate the low profile structure into the landscape over time as the vegetation matures. Considering the relatively minor nature of these changes, it is considered that the residual level of effect would remain as reported in the original ES - **Major to Moderate**.

Viewpoint 2 - East Heckington, A17

- 5.99 The consented wind park would be visible at close range occupying about 75% of the 70 degree field of view. Bearing in mind the large scale, homogenous and man-made character of the Fens,

plus the amount of open foreground retained in the vista, the predicted magnitude of visual change would be high.

- 5.100 The original ES concluded that a High magnitude of change, considered alongside the High sensitivity of the receptor, would result in a Major to Moderate level of effect.
- 5.101 The relocated substation would be approximately 800m to the east of the consented substation and would represent a reduction of visual change due to the increased distance of the structure from sensitive receptors combined with the screening effects of intervening hedgerow vegetation. In addition, as with **Viewpoint 1**, the relative proximity of the viewpoint (1.14 km) would result in some perceptible changes between the consented development and the proposed amended development. However, considering the relatively minor changes proposed, and the large-scale character of the landscape in which they would occur, it is considered that the level of effect would remain as reported in the original ES – **Major to Moderate**.

Viewpoint 3 - Glebe Farm, Sidebar Lane.

- 5.102 The consented wind park would be visible extending across approximately 65% of the 70 degree field of view, seen relatively uninterrupted at close range. Considering the expansive, man-made context of the Fens, the homogenous landscape elements and broad skies, the magnitude of visual change at this exposed location is predicted to be Medium to High, erring towards the higher end.
- 5.103 The original ES concluded that a Medium to High magnitude of change, considered alongside the High sensitivity of the receptor, would result in a Moderate to Major level of effect.
- 5.104 The relative proximity of this viewpoint (1.2 km) would mean the proposed amendments, in particular the increased rotor diameter and resulting lower blade sweep, would be perceptible. However, given the minor nature of these changes, and the large-scale character of the landscape in which they would occur, it is considered that the level of effect would remain as **Moderate to Major**, as reported in the original ES.

Viewpoint 4 - Amber Hill, Sutterton Drove.

- 5.105 The consented wind park would be visible at relatively close range occupying about 40% of the 70 degree field of view. Taking account of the large scale, homogenous man-made character of the Fens, combined with the sense of separation provided by the open foreground and enclosing hedgerow, the predicted magnitude of visual change would be on the lower side of 'medium to high'.
- 5.106 The original ES concluded that a Medium to High magnitude of change, considered alongside the High sensitivity of the receptor, would result in a Moderate to Major level of effect.
- 5.107 At a distance of approximately 1.9 km the proposed amendments would be only slightly perceptible. Therefore, it is considered that the level of effect would remain as reported in the original ES - **Moderate to Major**.

Viewpoint 5 - Swineshead Bridge, A17/A1121.

- 5.108 The consented wind park would be visible extending across approximately 40% of the 70 degree field of view, seen partly interrupted at relatively close range. Bearing in mind, the man-made context and homogenous, large scale character of the Fens, combined with the development,

associated infrastructure and traffic present, the magnitude of visual change at this dynamic location is predicted to be /Low to Medium magnitude.

5.109 The original ES concluded that a Low to Medium magnitude of change, considered alongside the Low sensitivity of the receptor, would result in a Minor to Moderate level of effect.

5.110 At a distance of over 2km, the proposed amendments would be largely imperceptible when compared to the consented scheme. The relocated substation would now be approximately 800m closer to this viewpoint compared to the consented scheme, however the structure would remain at a distance of 1.6 km and views would be heavily filtered by intervening vegetation. Therefore the level of effect would remain as reported in the original ES- **Minor to Moderate**.

Viewpoint 6 - South Kyme.

5.111 The consented wind park would be visible at medium range occupying about 25% of the 70 degree field of view. Taking account of the large scale, expansive character of the Fens, combined with the sense of separation provided by the open foreground, the interruption of visibility by the farm woodlands, and the upstanding built features in view (e.g. high voltage transmission lines and pylons and Bicker Fen wind farm) the predicted magnitude of visual change would be on the lower side of 'medium'.

5.112 The original ES concluded that a Medium magnitude of change, considered alongside the High sensitivity of the receptor, would result in a Moderate level of effect.

5.113 At a distance of over 3.8 km, the proposed amendments would be largely imperceptible when compared to the consented scheme. Therefore the level of effect would remain as reported in the original ES - **Moderate**.

Key Adjacent Visual Receptors

Recreational Trails and Public Rights of Way

5.114 **National Cycle Route 1** - at Holland Fen, the route passes within 4km of the nearest consented turbine at the closest point. Visibility across the open fenland at this general location is relatively unrestricted and visual change for cyclists, seeing the consented wind park obliquely or at right angles to the route is predicted to be medium magnitude which would be experienced as a moderate / minor visual effect for medium sensitivity receptors.

5.115 The original ES concluded that the consented wind park would significantly change views from a small number of public footpaths crossing the application land holding and in the immediate surrounding area within approximately 2km (and occasionally up to 3km depending on route alignment) of the nearest consented turbine. The footpaths so affected would be:

- **Heck/15/1** - People using public footpath Heck/15/1 between Crab Lane and Holland Dike, would pass within 500m of the nearest consented turbines and, because of the open landscape character and unrestricted nature of views, would be subject to very high magnitude of visual change. Walkers are high sensitivity examples of the receptors and would experience the change as a major and significant visual effect. The predicted magnitude of visual change on users of the footpath at its junction with Sidebar Lane would be lower – high (see **Photomontage 3**) due to the greater separation distance of over 1km, a level of change which would be felt as a major / moderate effect.

- **SKym/2/1** and **SKym/3/1** - Walkers using SKym/3/1 footpath and the public highway leading to Mill Green Farm from Sidebar Lane would also have unrestricted visibility of the consented wind park (see **Photomontage 1**) and, at approximately 1km distance, would be subjected to a high magnitude of visual change which would be experienced as a major / moderate and significant effect. The same would apply to people walking along footpath SKym/2/1 towards the application site between Car Dyke and Sidebar Lane within approximately 2km of the nearest consented turbine. Beyond this distance, between 2-2.5km, the magnitude of change would decrease to medium to high, which would be perceived by walkers as a moderate / major and significant change due to the unrestricted nature of views and the alignment of the path leading towards the application site. Between 2.5-3km would decrease farther still so that at 3km distance the predicted magnitude of change would be medium producing a moderate visual effect which would not be significant in EIA terms.

- **GtHa/cs/1** - People using this footpath, situated to the south of East Heckington and the A17, would be subject to a medium to high magnitude of visual change at most, when walking towards the consented wind park, which would be experienced as a moderate / major effect – **Photomontage 2** from the north side of A17 at East Heckington illustrates a slightly higher magnitude of visual change that would be felt from the path. The reason for the slightly lower level of visual effect than might be expected is because of the separation of the path from the site due to the settlement and the main road which would ameliorate the magnitude of change to a degree.

- **Ambe/4/1** - Users of this footpath walking from Sutterton Bridge towards Claydike Bank would be subject to medium to high magnitude of visual change, which would be perceived by walkers as a moderate to major and significant effect, due to the unrestricted nature of views and the alignment of the path leading towards the application site. **Photomontage 1** is illustrative of views from the path looking towards the consented wind park.

5.116 The effect on visual amenity experienced by users of Recreational Trails and Public Rights of Way would not be unacceptable, nor would people be prevented from using and enjoying the routes. Indeed some users would experience the change positively. No other public rights of way, long distance paths, or cycle routes within the study area would be visually affected in a significant way.

5.117 Due to the relatively minor changes proposed to the consented development, it is considered that the level of effect for users of Recreational Trails and PRow would remain as reported in the original ES and as summarized in **Table 5.3** below.

Places of Interest/Landmarks

5.118 **Kyme Tower** - Kyme Tower is privately owned, but open to the public by appointment. Although the base of the Tower is enclosed by hedgerows, trees and buildings and vegetation, there would be elevated views from the south side of the Tower where access permits. The magnitude of visual change, assuming unobstructed visibility of the consented turbines and taking into account the man-made fenland context and 360 degree nature of views from the Tower, would be medium which, at this high sensitivity receptor, would be experienced by observers as a moderate and not significant (in EIA terms) visual effect. **Photomontage 6** is illustrative of the scale of visual change where uninterrupted views of the proposal occur from the South Kyme area.

- 5.119 **South Kyme Golf Club** - Notwithstanding the generous swaths of tree planting, South Kyme Golf Course is relatively open and so there would be some visibility of the consented wind park from within it when looking south. The predicted magnitude of visual change, bearing in mind the separation distance of 4km, and the man-made landscape context and expansive nature of the fenland, would be low to medium at most where uninterrupted views are available in winter. The visual effect arising at this high sensitivity receptor would be minor to moderate or less and not significant in terms of the EIA Regulations. **Photomontage 6** shows the worst-case visual change from the South Kyme area.
- 5.120 Due to the relatively minor changes proposed to the consented development, and the distance of approximately 4km, it is considered that the level of effect from these places of interest would remain as reported in the original ES - **Minor to Moderate**.

Land with Public Access

- 5.121 **Amber Hill - Amber Hill / Toftstead Primary School playing fields** - The primary school at Amber Hill is enclosed by tall, deciduous hedgerows and mature trees which tend to interrupt views towards the application site. The turbines would be visible from parts of the grounds, particularly in winter, which would generate a medium magnitude of visual change due to the partially interrupted nature of views which at this high sensitivity receptor would cause a moderate effect which would not be significant in EIA terms. **Photomontage 4** illustrates the scale of predicted visual change from an exposed viewpoint nearby.
- 5.122 **South Kyme – St Mary and All Saints churchyard** - The churchyard at St Mary and All Saints Church is surrounded by mature trees and hedges and separated from the application site by several properties with mature gardens. Where available, views of the consented wind park, for example in winter when there is little foliage on trees and hedges, would be fragmented and filtered by vegetation. The predicted impact of magnitude of visual change would be very low which would be perceived by high sensitivity receptors as a Minor and Not Significant effect – **Photomontage 6** from the southern edge of South Kyme is illustrative of the scale of worst-case visual change at this general location.
- 5.123 **Holland Fen – recreation area / playing fields** - The burial ground at Holland Fen is surrounded by tall, deciduous trees and buildings which tend to break up views towards the application site. Glimpses of the wind park would be afforded from the grounds, particularly in winter, which would cause a low to medium magnitude of visual change because of the interrupted nature of views which, at this high sensitivity receptor, would give rise to a Minor to Moderate effect at most, which would not be significant in EIA terms.
- 5.124 Due to the relatively minor changes proposed to the consented development, it is considered that the level of effect from public access land would remain as reported in the original ES - **Minor to Moderate**.

Public Highways

- 5.125 A well-developed network of minor roads exists in the study area. It is considered that A, B and unclassified roads situated more than 2km from the nearest consented turbine would not experience significant visual effects due to their low sensitivity in landscape and visual terms, the separation distances involved and the fenland landscape context. Public highways lying within 5km which would fall into this category (more than 2km from the nearest consented turbine) are:

- The majority of the **A17** between Sleaford and the A16 intersection (see **Photomontage 5**) and passing ;
- The **A1121** between the A17 junction and Boston (see **Photomontage 5**);
- **B1395** from A153 junction to South Kyme Fen near Head Dike (**Photomontage 6** is illustrative of the route in the vicinity of South Kyme); and
- **Sutterton Drove** from the A1121 onwards (see **Photomontage 4**).

- 5.126 Within 2km of the nearest consented turbine, because of the flat, open landscape and expansive views across the fenland, stretches of local road would potentially be significantly affected visually by the consented development due to the close proximity of the observer and the relatively unrestricted visibility. Stretches of public highway affected in this way would be:

- The **A17** passing through East Heckington between Rakes Farm entrance and Elm Grange (see **Photomontage 2**);
- **Sidebar Lane / B1395** between the Fen Farm group of properties and the junction with the road leading to Mill Green Farm (see **Photomontage 3**); and
- Short stretch of **Claydike Bank / Maryland Bank** east of the site around The Old Church and 1-4 Maryland Bank.

- 5.127 The vast majority of public highways in the study area would not be affected to any significant degree. Short stretches of the A17, Sidebar Lane (B1395) and Claydike / Maryland Bank passing within approximately 1km of the nearest consented turbine, would be subject to moderate / major effects which is just above the threshold of EIA significance. The remainder of the public highway network in the study area would not be affected visually to any significant degree.

- 5.128 Due to the relatively minor changes proposed to the consented development, it is considered that the level of effect from public highways would remain as reported in the original ES.

Navigable Waterways

- 5.129 **River Witham** - The River Witham passes about 5km from the Site. However, due to the lower level of the water in the river and the high banks / dykes either side, it is unlikely that there would be much visibility of the consented wind park for people in boats using the route. However, assuming there are unrestricted views across the relatively open fenland landscape from tall pleasure craft, the predicted visual change at 5km distance would be the same of for users of the Water Rail Way, namely low to medium magnitude, resulting in a moderate / minor and not significant effect for high sensitivity receptors.

- 5.130 Due to the relatively minor changes proposed to the consented development, it is considered that the level of effect from users of navigable waterways would remain as reported in the original ES - **Minor to Moderate**.

CUMULATIVE

- 5.131 This section assesses the potential cumulative effects arising from the proposed Heckington Fen Wind Park and a number of other wind energy schemes, or Cumulative Assessment Schemes (CASs) in the surrounding landscape. This section should be read in conjunction with Addendum **Figures: 5.4, 5.5 and 5.6a-5.6e**; and Figure 5.12a of the original EIA.
- 5.132 Cumulative landscape and visual effects would potentially occur when one or more wind farm was apparent in views from certain locations or routes. Seen together, two or more wind farms may affect landscape character, views and / or visual amenity.

Assessment Scope

- 5.133 The cumulative assessment has been carried out in accordance with current best practice guidance as set out in the Methodology section above, in particular:
- Department of Trade and Industry and ETSU (2000) 'Cumulative Effect of Wind Turbines';
 - Scottish Natural Heritage (2012) 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' – Version 3; and
 - GLVIA 3 (2013) – Section 7.
- 5.134 Cognisance was also given to:
- Scottish Natural Heritage (2009) 'Cumulative Effect of Windfarms – Version 3 Consultation Draft'; and
 - Entec (for Dept of BERR) (2008) 'Review of Guidance on the Assessment of Cumulative Impacts on Onshore Windfarms'.
- 5.135 The scope of the assessment includes a number of operational, consented and 'In-Planning' wind energy schemes, as listed in **Table 5.2** below.

Table 5.2: Relevant Wind Energy Projects - Cumulative Baseline

Wind farm Scheme	Status	Approximate distance	No. of turbines	Max Height (to tip)	Figure No.
Bicker Fen	Operational	6km	13	110m	EIA 5.13a
Northbeck	In Planning	12km	1	77m	5.6a
Bernard Matthews Pinchbeck	Consented	17km	1	78m	5.6b
Ings Lane	Operational	17km	2	78m	EIA 5.13c
Holbeach St Marks	In Planning	18km	5	132m	5.6c
Nocton Fen	In Planning	22km	23	150m	5.6d
Delph	In Planning	23km	9	126m	5.6e

- 5.136 The schemes to be assessed are all within approximately 20km of the Development, with two in planning (Nocton Fen and Delph) slightly further afield. It was concluded that schemes located further than 25km would not be likely to give rise to significant landscape and visual effects due to the underlying topography, landscape character, and separation distances involved.
- 5.137 Since the original ES was published a number of wind energy projects within 25km of the proposed development have been removed from the planning system and have not therefore been considered. This includes Billingborough, which was abandoned for commercial reasons.

Assessment

- 5.138 The operational Bicker Fen wind farm is the closest CAS (6km) and would be intervisible with the Development from a number of areas within the study area. However, the separation of around 6km provides sufficient distance between the schemes, bearing in mind the flat, expansive man-made landscape and huge skies, to prevent significant cumulative effects arising on landscape character.
- 5.139 **Figure 5.3: Viewpoints 1, 4 and 6** illustrate the views of Bicker Fen from Mill Green Farm, Amber Hill and South Kyme respectively. The photomontages show the effects of the separation distance and the interruption to the views caused by intervening woodland and built development. This serves to restrict southward views, thus preventing significant cumulative landscape and visual effects.
- 5.140 The next closest CASs are Northbeck (consented / 'in planning'), Ings Lane (operational), Bernard Matthews Pinchbeck (consented) and Holbeach St Marks ('in planning'), relatively small scale schemes located at over 12km distance. These schemes will have a relatively small presence in the surrounding settled fenland landscape beyond 5km and, therefore, at distances of approximately 12km or more, would cause negligible cumulative landscape and visual effects with the Heckington Fen proposal.
- 5.141 The remaining CASs are located beyond 20km from the application site. There would be some potential intervisibility between these schemes and the Development within the study area. For example, Nocton Fen and the Development would potentially be simultaneously visible from Swineshead Bridge as indicated on **Figure 5.6d**. However, despite the relatively large-scale of the Nocton Fen scheme, views in practice would be long-range and restricted by intervening landscape elements such as woodland belts, as illustrated in **Photomontage 5**.
- 5.142 As a rule, although the landscape is flat and open, intervisibility within and / or across the low-lying Fens rapidly becomes restricted with increasing distance from the site due to the combination of level topography, characteristic tree cover (shelterbelts and woodland blocks), built form and infrastructure / engineered features, including embankments (dykes) etc which, working in concert, tend to fragment, filter or block visibility and interrupt views. Therefore, it is considered that significant cumulative landscape and visual effects would not arise at key receptors surrounding the Site and across the wider study area.

Conclusion

- 5.143 The proposed Development would not cause any significant additional cumulative landscape or visual effects in the study area. No significant cumulative effects would arise on the character of The Fens (NCA 46) or the Fenland (NKDC LCA 13 and Reclaimed Holland Fen BDC A1). Views from residential properties, places of interest, publicly accessible areas, recreational resources and public rights of way surrounding the application site would not be significantly affected in a

cumulative way, including those at Mill Green Farm, Sidebar Lane, East Heckington, Swineshead Bridge, Amber Hill and South Kyme. None of the settlements, places of interest, long distance paths / cycle routes and other landscape resources in the wider study area would experience significant cumulative landscape and visual effects. No public highways in the study area would be affected cumulatively to any significant degree, including the B1395 Sidebar Lane and the A17. In summary the proposed variation would cause the same levels and significance of cumulative landscape and visual effect as the consented scheme in the 2011 ES LVIA.

MITIGATION

Strategies to mitigate any potential significant environmental impacts

- 5.144 The scope for mitigating the likely landscape and visual effects of wind energy development is very limited. A number of mitigation measures have been incorporated into the design of the variation proposal including: a) the site layout and turbine location iterations as recorded in the 2011 ES Chapter 3: Site Selection; b) the off-white turbine colour; and c) the replacement grassland / arable crop (over most of the turbine base area) during operation. Other mitigation features include the use of existing access points and tracks where practicable which would minimise onsite landscape impacts and allow the majority of the land to be farmed throughout the lifespan of the wind park.
- 5.145 In addition to these, the following additional mitigation measures are proposed in respect of the proposed substation:
- A new area of tree / hedge planting to the west, south and east of the proposed substation to help restrict views from receptors to the south-west, south and south-east, as well as to integrate the feature into the surrounding landscape.
- 5.146 It should be noted that these measures would not necessarily alter the significance of residual landscape and visual effects within the design life of the wind park. However, the suggested additional mitigation would provide some amelioration to identified visual effects as well as enhancing landscape character and visual amenity, albeit to a small degree, and therefore would be desirable.

SUMMARY AND CONCLUSION

- 5.147 The residual landscape and visual effects would remain as described in Chapter 5: Landscape and Visual in the original ES, as follows:

The proposed Heckington Fen Wind Park would cause a small number of significant landscape and visual effects during construction and operation within approximately 2km of the application site. These significant, but not unacceptable, effects would potentially occur at approximately 50 dwellings surrounding the site, short lengths of several public rights of way and highways within approximately 2.5km, occasionally up to 3km in the case of certain public rights of way, and the character of the host landscape within about 1.5km of the nearest proposed turbine. The remaining residential properties, public rights of way and other landscape resources in the study area would not be affected to any significant degree. No designated landscapes, popular recreation resources or places of interest (including features with public access) would be significantly affected.

- 5.148 The proposed amendments, in particular the increased rotor diameter and lower blade sweep, would be perceptible from receptors in proximity, however this is not considered to change the overall level of effects reported in the original ES. The same would apply in respect of the updated substation proposal taking into its revised location and increased size. A summary of the significant landscape and visual effects identified are summarised in **Table 5.3** below.

Table 5.3: Summary of Significant Landscape and Visual Effects

2011 Environmental Statement														2014 Addendum			
Stage of Development	Feature (Receptor)	Sensitivity	Description of Potential Effect	Effect Before Mitigation		Summary of Mitigation	Effect After Mitigation							Effect After Mitigation			Change to Conclusion of 2011 LVIA?
				Magnitude of change	Significance before mitigation		Magnitude of Change	Positive / Negative *	Land-scape Policy (ie. PPS7) *	Direct / Indirect / Secondary/ Cumulative	Short / medium / long term	Permanent/ Temporary	Residual Significance	Magnitude of Change	Landscape Policy – Positive / Negative *	Residual Significance	
O/C/D	Certain residential properties situated within 2.5km of the nearest turbine #1	High	Change to views / visual amenity	High / Medium to High	Major / Moderate to Moderate / Major	N/A	High / Medium to High	N/A	Adverse	Direct	Medium term	Permanent / Reversible	Major / Moderate to Moderate / Major	High / Medium to High	Adverse	Major / Moderate to Moderate / Major	No Change
O/C/D	Landscape character up to 1.5km from nearest turbine #2	Medium to Low	Change to landscape character	Very High / High	Moderate / Major	N/A	Very High / High	N/A	Adverse	Direct and Indirect	Medium term	Permanent / Reversible	Moderate / Major	Very High / High	Adverse	Moderate / Major	No Change
O/C/D	PRoW crossing and adjacent to site up to 1km from nearest #3turbine #3	High	Change to views / visual amenity	Very High	Major	N/A	Very High	N/A	Adverse	Direct	Medium term	Permanent / Reversible	Major	Very High	Adverse	Major	No Change
O/C/D	Rights of way between 1 to 2km (occasionally up to 3km) from nearest turbine #4	High	Change to views / visual amenity	High / Medium to High	Major / Moderate to Moderate / Major	N/A	High / Medium to High	N/A	Adverse	Direct	Medium term	Permanent / Reversible	Major / Moderate to Moderate / Major	High / Medium to High	Adverse	Major / Moderate to Moderate / Major	No Change
O/C/D	Main roads adjacent to the site (within 1km) #5	Low	Change to views / visual amenity	High to Very High	Moderate / Major	N/A	High / Medium to High	N/A	Adverse	Direct	Medium term	Permanent / Reversible	Major / Moderate to Moderate / Major	High / Medium to High	Adverse	Major / Moderate to Moderate / Major	No Change

Note

* In the above summary table the distinction made in the original ES LVIA between a) how effects are perceived by people, and b) the landscape planning policy aspect, and which was incorporated into Table 5.10 Summary of Significant Landscape and Visual Effects of the ES LVIA (as reproduced in the left hand part of Table 5.3 above), has been brought together into one column on the right of the table under a single combined heading of 'Landscape Policy – Positive/Negative'. This change has been made to simplify the table and avoid confusion; it does not alter any of the assessment findings. This approach is in keeping with the updated best practice guidance on landscape and visual assessment (GLVIA3).

- #1- Mill Green Farm, off Clay Bank; East Heckington; Glebe Farm, Sidebar lane; and Amber Hill, Sutterton Drove.
 #2- Small tract of The Fens (NCA 46) / Fenland (NKDC LCA 13) / Holland Reclaimed Fen (BDC LCA A1) national / local character area(s) incorporating application site / landholding within approximately 1.5km of nearest proposed turbine.
 #3- Definitive Footpath Heck/15/1 lies within 0.5-1km of the nearest proposed turbine.
 #4- Sections of Definitive Footpaths. SKym/2/1, SKym/3/1 (including public track to Mill Green Farm), GtHa/cs/1 and Ambe/4/1 lying between 1km and approximately 3km from the nearest proposed turbine.
 #5- Short stretches of the A17 and B1395 Sidebar Lane passing the application site within approximately 1km of the nearest proposed turbine.