Nationally Significant Infrastructure Project
EN010123: Heckington Fen Solar Park

Local Impact Report - October 2023

Contents

1. Introduction

1.1 The Heckington Fen Solar Park (HFSP) is proposed by Ecotricity (Heck Fen Solar) Limited (the Applicant). The HFSP is a ground mounted solar photovoltaic (PV) electricity generating and energy storage facility covering approximately 644.5 hectares (ha) of land (the Order limits) within the administrative areas of Lincolnshire County Council (LCC), North Kesteven District Council (NKDC), and Boston Borough Council (BBC).

1.2 Also referred to as the Heckington Fen Energy Park, the HFSP would be capable of exporting 400 megawatts (MW) Alternating Current (AC) of electricity, connecting to the National Grid at the Bicker Fen 400kV Substation. As the total capacity of the facility exceeds 50MW, the Applicant has made an application to the Secretary of State for Energy Security and Net Zero (SoS) for a Development Consent Order (DCO), pursuant to Section 37 of the Planning Act 2008 (PA2008). A panel of independent examining inspectors (referred to as the Examining Authority (ExA)) are examining the application before making a recommendation to the Secretary of State for the Department of Energy Security and Net Zero (the SoS) who will then decide whether a DCO for the project should be granted.

2. Purpose and Structure of the Report

2.1 LCC is classed as a 'host authority' as all of the HFSP falls within its administrative area. LCC have therefore been invited by the ExA to submit a Local Impact Report (LIR). A LIR is defined under Section 60(3) of the PA2008 as a *'report in writing giving details of the likely impact of the proposed development on the authority's area (or any part of that area).'* Upon the conclusion of the examination, the SoS must have regard to any LIRs produced.

2.2 The purpose of this LIR is to give an overview of the likely issues and impacts that LCC considers will arise from the construction and operation of the HFSP in so far as it affects Lincolnshire. As host authorities, NKDC and BBC will also look to submit their own LIRs setting out the impacts of the development in their respective areas.

2.3 This LIR contains a brief overview of the Proposed Development and description of the site and surroundings associated with the HFSP. The LIR also identifies relevant national and local development plan policies and principally covers topics/areas where LCC has a statutory function or holds a particular expertise or interest due to the potential impacts/implications of the development on Lincolnshire. It should however be noted that the absence of reference to a specific topic/matter within this LIR should not be read as LCC having no interest in that topic/matter but rather we have no specific technical comments and in such instances the ExA are advised to refer to the comments and/or advice from other bodies, authorities or interested parties. However, LCC may wish to, and reserve the right, make formal written representations and submissions on other topics/matters during the Examination process should we feel this necessary.

2.4 This LIR does not seek to duplicate material covered in the Statement of Common Ground (SoCG) which will be progressed throughout the Examination stage.

3. Overview of the Proposed Development

3.1 The Applicant is seeking a DCO to construct, operate, maintain, and decommission a ground mounted solar PV electricity generating facility, an energy storage system (ESS) facility, and an underground cable connection to the National Grid. The HFSP and associated infrastructure would be capable of exporting 400MW AC (or approximately 500MW Direct Current (DC)) of electricity, connecting to the National Grid at the Bicker Fen 400kV Substation. The ESS facility would provide import/export storage capacity of approximately 200 - 400MW (depending on the technology) for use during periods of peak energy production.

3.2 A full description of the Proposed Development and various ancillary structures themselves is not detailed within this report as this is set out in the DCO application documents. However, the land required temporarily and/or permanently for the construction, operation, and maintenance of the HFSP (the Order limits) comprises of three key areas, which are:

- Energy Park – an area of approximately 524ha proposed for solar development (comprising of PV modules, mounting racks, inverters, transformers, and switchgears) and an ESS facility, as well as the onsite substation and other associated ancillary infrastructure (e.g. construction compounds, security fencing, and fire safety infrastructure);
- Cable Route Corridor – a 25m wide corridor required to lay below ground cables from the Energy Park's onsite substation to the National Grid connection point. This corridor extends approximately 8.5km south from the Energy Park and crosses arable land, the A17, drainage ditches, a high-pressure gas pipe, a railway line, and the South Forty Foot Drain Local Wildlife Site;
- Existing National Grid Substation – located south of the Energy Park, an extension is required to the existing National Grid Bicker Fen Substation in order to facilitate connection to the Proposed Development. The extension will include a new generation bay and control room on a 145m x 45m area of land.

3.3 Subject to the necessary consents being granted, construction work is anticipated to commence in Spring 2025 (at the earliest) and is expected to be completed in a single continuous build lasting 30 months. The earliest the Proposed Development will commence commercial operation is Autumn 2027. The operational life of the Proposed Development is to be 40 years and therefore decommissioning is estimated to take place no earlier than 2067 (taking 6 - 18 months to complete).

4. Description of the Site and Surroundings

4.1 The Energy Park site is located on an area of greenfield agricultural land within East Heckington, approximately 3.7km east of the village of Heckington and 8.9km west

of the town of Boston. The village of Heckington is separated from the main Energy Park site by agricultural land within the surrounding fenland landscape.

4.2 The Energy Park itself lies wholly within the administrative area of NKDC, abutting BBC's administrative boundary along the eastern edge of the site. The Cable Route Corridor straddles the two administrative areas, with the section within the Energy Park running southwards from the proposed onsite substation to the edge of the site. The majority of the Offsite Cable Route Corridor lies within BBC's administrative area. The existing National Grid Bicker Fen Substation also lies wholly within BBC's administrative area.

4.3 The site is bounded by Head Dike to the north, a smaller watercourse to the east, agricultural land to the south, and the B1395 Sidebar Lane and further agricultural land to the west. To the south of the Energy Park site are three existing access points which connect to the A17.

4.4 The nearest residential and commercial properties are along the A17 and the B1395 Sidebar Lane to the south and west of the Energy Park site (the majority of which are over 150m from the development). A facility called 'Build-A-Future East Heckington', which offers educational and vocational courses to children with learning difficulties, lies on the southwestern boundary of the site.

4.5 The Energy Park will utilise an area of approximately 524ha of agricultural land for the solar panel arrays and associated infrastructure. Just over half of this land (50.6%) is Grade 3b agricultural land (considered to be poorer quality land). The remaining 49.4% of the area is a combination of Grade 1 (11.1%), Grade 2 (7.4%) and Grade 3a (30.5%) agricultural land (classed as 'best and most versatile' (BMV) land) and 0.4% of the site area is non-agricultural land.

4.6 The site is situated on the Lincolnshire Fens (National Character Area 46), a coastal plain in the East of England which comprises a large area of broad marshland. As such, the site is very flat and low-lying (at between 2 - 3m Above Ordnance Datum (AOD) across the entire site). The Energy Park site is predominantly located in Flood Zone 3, which is an area classed as having a high risk from fluvial or tidal flooding (1%≤ probability of flooding from rivers or 0.5%≤ probability of flooding from the sea, as indicated by the Environment Agency Flood Map for Planning).

4.7 There are no designated archaeological remains located within the Energy Park however, there are a number of known and potential non-designated built and archaeological remains located within the site's boundary. In addition, there is one Scheduled Monument and four Grade II Listed Buildings which lie within a 2km radius of the Energy Park site.

4.8 There are a number of environmental constraints and designations that lie within (or within proximity to) the Order limits, including:

- The Wash - situated approximately 4.9km from the Offsite Cable Route Corridor at its nearest point. This is a European and national designated site (Special Protection Area, Special Area of Conservation, Site of Specific Scientific Interest, and National Nature Reserve);
- Local Wildlife Sites - South Forty Foot Drain, and Cole's Lane Ponds;
- Sites of Nature Conservation Interest - Old Wood South Kyme, and Heckington Grassland;
- Public Rights of Ways (PRoWs) - which include:
    - Footpath HECK/15/1 - this footpath routes along the northern boundary of the Energy Park, crossing only a small part (c.280m) of the site;
    - Footpaths SWHD/14/1 and SWHD/15/2 - these footpaths route along the north and south embankments of the South Forty Foot Drain respectively;
    - Bridleway SWHD/13/1 – this bridleway runs along the southern embankment of the South Forty Foot Drain, west of the A17.

5. Planning History

5.1 Consent was granted by the Secretary of State on 8 February 2013 to construct and operate a 22 turbine onshore windfarm of up to 66MW capacity on part of the proposed solar farm site subject to a number of conditions including that it must commence within 5 years of the date of the decision and that a Radar Mitigation Scheme (RMS) must be prepared, submitted and approved prior to the commencement of development (reference: 09/1067/S36).

5.2 The Applicant subsequently applied to the Department of Energy and Climate Change (DECC) on 6 February 2015 to vary the original consent, through proposing alterations to some sections of the onsite access track, relocation of the onsite substation and an increase in the rotor diameter of the turbines to maximise the renewable energy generation of the site. No changes were proposed to the overall tip height of the turbines (125m), the maximum number of turbines (22) or the locations of the turbines (reference: 15/0416/S36).

5.3 The 2015 variation application also sought to vary condition 5 of the original consent to allow the discharge of the RMS condition prior to installation of the turbines rather than prior to the commencement of the development. The Applicant considered that this variation still provided the necessary protection for military and civilian radar whilst allowing the development to be commenced whilst studies continued in parallel to identify, test and agree (in consultation with the relevant aviation and military bodies) an appropriate mitigation scheme. No decision was made on the 2015 variation.

5.4 In 2018 a further variation application(reference: 18/1384/S36) was made and sought to extend the date by which the development must be commenced from 5 years to 10 years from the date on which consent was granted (i.e. that development must commence by 8 February 2023). The 2018 application was received by the Secretary of State on 2 February 2018, shortly before the original consent was due to expire.

5.5 The Secretary of State refused the 2018 variation application by notice dated 28 July 2022, noting that there was no valid RMS, nor had the Secretary of State seen any credible prospect of one being secured within the extended timeframe sought by the Applicant. The decision letter noted this to be a factor which '*weighed significantly against the granting of the variation'* and having considered all matters raised concluded that it was of sufficient weight to mean that the planning balance overall weighed against consent being granted for the 2018 variation application. The 2018 decision letter also noted that given that the original consent could no longer be implemented (unless the 2018 variation application had been granted) the Secretary of State considered that the 2018 variation application was, in effect, an application for a new consent and was therefore subject to the revised local and national policy provisions (of general prohibition) relating to onshore wind issued through Written Ministerial Statement HCWS42 dated Thursday 18 June 2015.

5.6 The Applicant accepts that the windfarm has not been constructed and become operational due to difficulty in satisfying the Grampian RMS condition, and that whilst the development process for a technical solution is still progressing, to date a suitable solution for the MoD has not been found. The Applicant's view is that the wind farm consent remains extant however that if the proposed solar scheme was to gain consent and become operational the wind turbines would not be progressed further and the wind farm consent would be allowed to lapse.

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suitable solution for the MoD has not been found. The Applicant's view is that the wind farm consent remains extant however that if the proposed solar scheme was to gain consent and become operational the wind turbines would not be progressed further and the wind farm consent would be allowed to lapse.

5.10 Whilst the Applicant's view is noted both LCC and NKDC's view (which would appear to be supported by the 2018 variation application decision letter) is that the original consent has now lapsed and therefore the wind farm is not capable of being implemented. Therefore there is no realistic prospect of the previous wind farm development being implemented and so does not represent a 'fall-back' position.

6. Policy Context

6.1 National Planning Policy Statements

6.1.1 The SoS is required to have regard to any relevant national policy statements (NPSs), amongst other matters, when deciding whether or not to grant a DCO. Where there is a relevant NPS in place, the DCO applications are determined in line with Section 104 of the PA2008. However, where there is no relevant NPS in place then Section 105 of the PA2008 takes effect and provides the legal basis for determining DCO applications. Section 105 requires the SoS to take into account 'important and relevant' matters, which includes this LIR and any matters which the SoS thinks are both important and relevant to its decision.

6.1.2 The following NPSs are considered relevant to the determination of this DCO application however, none explicitly cover solar powered electricity generation. Nevertheless, they set out assessment principles for judging impacts of energy projects and are still a material consideration that the SoS will need to take into account. The NPSs are as follows:

- EN-1: Overarching National Policy Statement for Energy
- EN-3: National Policy Statement for Renewable Energy Infrastructure
- EN-5: National Policy Statement for Electricity Networks Infrastructure

6.1.3 EN-1 (Overarching National Policy Statement for Energy) confirms the Government's commitment to the legally binding target to cut greenhouse gas emissions by 80% by 2050, compared to 1990 levels. It also identifies the need to dramatically increase the amount of renewable electricity generation capacity in order to meet the commitments under the EU Renewable Energy Directive, and to improve energy security by reducing dependence on imported fossil fuels, decreasing greenhouse gas emissions, and providing economic opportunities. Solar is noted within the document as being an intermittent renewable technology.

6.1.4 EN-3 (National Policy Statement for Renewable Energy Infrastructure) was published in 2011 and covers those technologies which were technically viable at generation capacities of over 50MW onshore and 100MW offshore. Solar PV is not included in the EN-3 because at the time it was published, utility scale solar development was

not considered to be commercially or technically viable. Nonetheless, it is a material planning consideration in the determination of the DCO application which the SoS will no doubt take into account.

6.1.5 EN-5 (National Policy Statement for Electricity Networks Infrastructure) is also relevant as it recognises electricity networks as *"transmission systems (the long distance transfer of electricity through 400kV and 275kV lines), and distribution systems (lower voltage lines from 132kV and 230kV from transmission substations to the end-user) which can either be carried on towers/poles or underground"* and *"associated infrastructure, e.g. substations (the essential link between generation, transmission, and the distribution systems that also allow circuits to be switched or voltage transformed to a useable level for the consumer) and converter stations to convert DC power to AC power and vice versa."* This is therefore relevant in so far as it relates to the proposed Grid connection.

6.2 Draft Revised National Planning Policy Statements

6.2.1 The Government is reviewing and updating the NPSs in order to ensure that the policy framework enables the delivery of infrastructure required to support the transition to Net Zero. Revised draft versions of EN-1 and EN-3 were first published and consulted upon in 2021. The revised drafts recognised and included reference to Nationally Significant Infrastructure Project (NSIP) scale solar projects and contained specific policies and factors that should be taken into consideration when assessing such proposals. The draft NPSs have been updated and revised since 2021, with the latest changes being focused principally on seeking views on the importance of both onshore and offshore wind and cutting down the time to process applications relating to such projects. These changes have also included proposals to update the civil and military aviation and defence interests to reflect the status of energy developments and how impacts to civil and military aviation, meteorological radars and other types of defence interests should be managed. Much of the content relating to solar development as proposed within the first revised draft versions of EN-1 and EN-3 remains unchanged.

6.2.2 The revised draft EN-3 states that solar is a key part of the government's strategy for low-cost decarbonisation of the energy sector and the government expects a five-fold increase in solar development by 2035 (up to 70GW). It is also stated that solar farms can be built quickly and, coupled with consistent reductions in the cost of materials and improvements in the efficiency of panels, large-scale solar is now viable in some cases to deploy subsidy-free.

6.2.3 Sections 3.10.9 to 3.10.39 of the revised draft EN-3 sets out the key considerations and factors that will need to be taken into consideration when selecting sites (including irradiance and site topography, proximity of site to dwellings, agricultural land classification and land type, accessibility, public rights of way, security and lighting, and grid connectivity). The technical considerations are set out in Sections

3.10.40 to 3.10.63 and include capacity of the site, site layout, design and appearance, project lifetimes, and flexibility. Impacts that will need to be considered are set out in Sections 3.10.64 and 3.10.117 and include biodiversity and nature conservation, landscape, visual and residential amenity, glint and glare, cultural heritage, construction including traffic and transport noise, and vibration.

6.2.4 Both draft EN-1 and EN-3 are not yet designated and therefore do not 'have effect' for the purposes of Section 104 of the PA2008. However, the transitional arrangements set out in these documents confirm that any emerging draft energy NPSs (or those designated but do not have effect) are potentially capable of being important and relevant considerations in the decision-making process. The extent to which they are relevant is a matter for the SoS to consider within the framework of the Planning Act and with regard to the specific circumstances of each DCO application. Therefore, both the current and draft NPSs identified above, are likely to be matters the SoS will consider 'important and relevant' and take into account in the determination of the application.

6.3 National Planning Policy Framework (NPPF), National Planning Policy Guidance, and Written Ministerial Statement

6.3.1 The NPPF was published in 2012 and updated in 2018, 2019, 2021 and just recently in September 2023.

6.3.2 Paragraph 5 of the NPPF states that the document does not contain specific policies for NSIPs. These are to be determined in accordance with the decision-making frameworks set out in the PA2008 and relevant NPSs for nationally significant infrastructure, as well as any other matters that are considered 'important and relevant' (which might include the NPPF).

6.3.3 The NPPF does however state that the planning system should support the transition to a low carbon future and support renewable energy and associated infrastructure (paragraph 152) and that local planning authorities should, when determining planning applications for such development, approve the application if its impacts are (or can be made) acceptable.

6.3.4 The National Planning Policy Guidance (NPPG) outlines guidance on the specific planning considerations that relate to large scale ground-mounted solar PV farms (013 Reference ID: 5-013-20150327). It states that one consideration amongst others should be whether land is being used effectively; recommending that large scale solar farms are focused on previously developed and non-agricultural land.

6.3.5 The NPPG advises that where a proposal involves greenfield land, decision making should consider whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays.

6.3.6 The potential impacts of large-scale solar farms were also addressed through a speech by the then Minister for Energy and Climate Change to the solar PV industry on 25 April 2013 and subsequent Written Ministerial Statement (WMS). The speech highlighted the importance of considering the use of low grade agricultural land which works with farmers to allow grazing in parallel with generation, and the WMS (dated 25/3/15 - UIN HCWS488) stressed that meeting our energy goals should not be used to justify the unnecessary use of high quality agricultural land, noting that *'any proposal for a solar farm involving the best and most versatile agricultural land would need to be justified by the most compelling evidence'*.

6.4 Local Planning Policy

6.4.1 Whilst not determinative under the PA2008, there are a number of local development plan policies that LCC considers to be of relevance to this application and which the ExA and the SoS are therefore advised to take into account in the determination of the application.

6.4.2 It is envisaged that the relevant policies from the development plan will be agreed within the SoCG to be produced between the Applicant and LCC. However, it is considered relevant and necessary to consider the compliance of the proposal with the development plan policies at this stage, and to identify where there is conflict and the nature of impacts that would arise from such conflict.

6.4.3 The relevant plans and policies in so far as the development affects Lincolnshire are as follows:

Central Lincolnshire Local Plan 2023-2040 (adopted April 2023) (CLLP) – there are several planning policies contained within this document that are relevant to the consideration of the proposal. These are as follows:

- Policy S1 - The Spatial Strategy and Settlement Hierarchy
- Policy S5 - Development in the Countryside
- Policy S10 - Supporting a Circular Economy
- Policy S11 - Embodied Carbon
- Policy S12 - Water Efficiency and Sustainable Water Management
- Policy S14 - Renewable Energy
- Policy S16 - Wider Energy Infrastructure
- Policy S21 - Flood Risk and Water Resources
- Policy S47 - Accessibility and Transport
- Policy S50 - Community Facilities
- Policy S53 - Design and Amenity
- Policy S54 - Health and Wellbeing
- Policy S57 - The Historic Environment
- Policy S59 - Green and Blue Infrastructure
- Policy S60 - Protecting Biodiversity and Geodiversity

- Policy S61 - Biodiversity Opportunity and Delivering Measurable Net Gains
- Policy S66 - Trees, Woodland and Hedgerows
- Policy S67 - Best and Most Versatile Agricultural Land

South East Lincolnshire Local Plan 2011-2036 (adopted March 2019) (SELLP) - there are several planning policies also contained within this document that are relevant to the consideration of the proposal. These are as follows:

- Policy 1 - Spatial Strategy
- Policy 2 - Development Management
- Policy 3 - Design of New Development
- Policy 4 - Approach to Flood Risk
- Policy 28 - The Natural Environment
- Policy 29 - The Historic Environment
- Policy 30 - Pollution
- Policy 31 - Climate Change and Renewable and Low Carbon Energy
- Policy 33 - Delivering a More Sustainable Transport Network

7. Local Impacts

7.0.1 The following sections identify, under separate topic headings, the relevant policies, the key issues and impacts raised by the Proposed Development, and whether LCC considers those impacts to be positive, neutral, or negative. As stated earlier, the topics covered in this LIR are focused primarily on those where LCC has a statutory function or holds a particular expertise or interest due to the potential impacts/implications of the development on Lincolnshire. The absence of reference to a specific topic/matter within this LIR should not be read as LCC having no interest but rather we have no specific comments to make at this stage. In such cases the ExA are instead advised to refer to the comments and/or advice from other bodies, authorities or interested parties. LCC may wish however to make further representations as appropriate during the Examination and at Issue Specific Hearings relating to matters that are not contained within this LIR. Therefore the comments contained within this LIR are provided without prejudice to the future views that may be expressed by LCC in its capacity as an Interested Party in the examination process.

7.1 Landscape and Visual

Key Policies

- CLLP Policy S14 - Renewable Energy
- CLLP Policy S53 - Design and Amenity
- SELLP Policy 3 - Design of New Development
- SELLP Policy 31 - Climate Change and Renewable and Low Carbon Energy

7.1.1 CLLP Policy S14 (Renewable Energy) states that proposals for renewable energy schemes, including ancillary development, will be supported where the direct, indirect, individual, and cumulative impacts of development on landscape character and visual amenity are, or can be made, acceptable.

7.1.2 CLLP Policy S53 (Design and Amenity) states that all development must achieve high quality sustainable design that contributes positively to local character and landscape. Development proposals should be based on a sound understanding of the context, integrate into the surroundings, relate well to the site, contribute to the sense of place, and protect any important local views into, out of, or through the site.

7.1.3 Policy 3 (Design of New Development) states that development proposals will be required to demonstrate, where relevant, how the landscape character of the location will be secured. Design which is inappropriate to the local area, or which fails to maximise opportunities for improving the character and quality of the area, will not be acceptable.

7.1.4 SELLP Policy 31 (Climate Change and Renewable and Low Carbon Energy) states that development of renewable energy facilities and associated infrastructure will be permitted provided, individually, or cumulatively, there would be no significant harm to visual amenity and landscape character or quality. Provision should be made for post-construction monitoring, and the removal of the facility and reinstatement of the site if the development ceases to be operational.

7.1.5 The following elements within the Proposed Development have been identified by the Applicant as having the potential to result in adverse landscape and visual effects. These include:

- Extensive areas of fixed PV mounting (solar modules) up to 3.5m high;
- Up to 127 Inverter and Transformer Stations located amongst the solar modules;
- The Main Onsite Substation Compound with an overall footprint of approximately 185m x 110m and a maximum assumed height of 15m (but mainly between 4 - 6m, with three 'step-down' transformers of up to 12m in height);
- The ESS facility (comprised of energy storage containers, inverters, transformers, switchgears, and control room) with an overall footprint of approximately 280m x 280m, and with infrastructure up to 6m in height;
- 3m high perimeter security fencing with 3.5m high CCTV mounted on steel poles within the perimeter fence and within the Energy Park;
- One main gatehouse and two minor gatehouses with overall footprints of 5m x 5m x 4m and 3m x 3m x 4m respectively;
- National Grid Bicker Fen Substation extension works with an overall footprint of approximately 145m x 45m. The maximum heights of the generator bay and control room would be 15m and 4m, respectively.

7.1.6 The general approach to the Landscape Visual Impact Assessment (LVIA) was agreed between the Applicant and the landscape consultant acting on behalf of LCC, with feedback also provided by officers at NKDC and BBC. This agreed approach included the scope of work, the study area (preliminary 5km radius), methodology and viewpoint selection (which was expanded upon at the statutory consultation stage).

7.1.7 On a national level, the landscape associated with the Order Limits falls within Character Area 46 'The Fens' of the National Landscape Character Area. The key landscape characteristics are as follows:

- Expansive, flat, open, low-lying wetland landscape influenced by the Wash estuary, and offering extensive vistas to level horizons and huge skies throughout, providing a sense of rural remoteness and tranquillity;
- Sparse woodland cover notably comprising of a few small woodland blocks, occasional avenues alongside roads, and isolated field trees;
- Predominant arable land use;
- Open fields bounded by a network of drains and the distinctive hierarchy of rivers (some embanked) which strongly influence the geometric/rectilinear landscape pattern;
- Scattered isolated farmsteads and villages dispersed along the main arterial routes through the settled fens.

7.1.8 Similar landscape characteristics are described in the 2007 'North Kesteven Landscape Character Assessment' and the 2009 'Landscape Character Assessment of Boston' published by NKDC and BBC, respectively.

7.1.9 The Order Limits and surrounding landscape are not subject to any nationally designated landscape areas (e.g. a National Park or Area of Outstanding Natural Beauty) or Areas of Great Landscape Value. Whilst this is true, the Applicant concludes that the local landscape is of 'high sensitivity' to the Proposed Development. Site visits and field work confirm that views from within the Energy Park site are medium to long range but, in places, particularly to the south, are interrupted by built form and vegetation that line the A17 (including Elm Grange, Home Farm, Rectory Farm, Rakes Farm, the A17 petrol station, and a group of semi-detached houses in East Heckington identified as No. 1 - 12 Council Houses).

7.1.10 Theoretical visibility of the Energy Park extends across parts of South Kyme Fen, Mary Land, Holland Fen, Amber Hill, Algarkirk Fen, Ewerby Fen, and Howell Fen (beyond the 5km LVIA assessment radius). Whilst this is reflective of the level landform of the fenland landscape and lack of any substantial areas of woodland, views in reality will still be interrupted by roadside vegetation. The Energy Park is also enclosed by embankments associated with Head Dike, Holland Dike, and Skerth Drain which bound the site to the north, north east and east respectively. These will interrupt the inter-visibility with the wider countryside.

7.1.11 With regard to the National Grid Bicker Fen Substation extension works, the existing 400kV Bicker Fen Substation is not evident in views from the medium or long-range

landscape of West Low Grounds or East Low Grounds. Views from the north and east are screened by the mitigation planting that encloses the Substation.

7.1.12 As a result of these preliminary observations, the Applicant determined that the primary focus of the landscape character and visual assessment should be on the study area of up to 1.5km radii, acknowledging that some of the selected viewpoints may lie beyond this distance. The study area is not intended to provide a boundary beyond which the Proposed Development will not be seen, but rather to define the area within which to assess its potential significant landscape and visual effects. The LVIA considered the impacts of development from 23 viewpoints which represent views experienced by a range of receptor groups (e.g. residents/local community, PRoW users, and road users). After a scoping out process was applied, 12 of the 23 viewpoints were deemed to have the potential to be significantly affected and were taken forward for detailed assessment.

7.1.13 There are a number of PRoWs within the vicinity of the Order limits which have been analysed during the site visits and field work to establish the level of inter-visibility between these linear receptors and the land within the Order limits. The four following PRoWs were deemed relevant or informative to the LVIA:

- Public Footpath SKym/2/1 along the western section of Head Dike;
- Public Footpath HECK/15/1 between Sidebar Lane and the Energy Park. The route partially coincides with Crab Lane but there is no continuation along the eastern section of Head Dike and along the northern edge of the Energy Park due to lack of access;
- Public Footpath Swhd/14/1 leading from Swineshead Bridge along the railway line;
- Public Footpath Ambe/4/1, at Claydike Bank, near Amber Hill, Sutterton Fen.

7.1.14 The Applicant's LVIA concludes that the construction stage of the Proposed Development will result in temporary short-term significant adverse effects upon the local fenland landscape associated with the Order Limits and its immediate context (up to approximately 500m). Beyond the immediate context, the effects have been assessed as minor, thus, not significant. Impacts upon visual receptors at East Heckington, road users along localised sections of the A17 and the B1305 Sidebar Lane, and passengers travelling west along the railway line from Swineshead Bridge, will be 'major and significant'. The visual effects for users of the Public Footpaths SKym/2/1, HECK/15/1, and Swhd/14/1 are also assessed to be 'major and significant'.

7.1.15 The operational phase of the Proposed Development has been assessed as potentially causing geographically highly limited yet significant adverse effects upon the character of the fenland landscape within the Energy Park itself and its immediate context of up to approximately 500m. Again, beyond this immediate context the effects have been assessed as minor, thus, not significant. With regard to the visual receptors, the operational phase has been considered to bring about significant adverse effects upon the receptors within East Heckington, road users

travelling along the central and southern section of the B1395 Sidebar Lane, and users of both the Public Footpaths SKym/2/1 and HECK/15/1, and the proposed permissive path within the Energy Park site. The static viewpoints 1, 2, 4 and 6 have also been assessed as potentially experiencing significant adverse effects.

7.1.16 The Applicant highlights that the Proposed Development has incorporated a number of built-in mitigation measures through the iterative design process in order to address the assessment of potential significant effects, including increased offset distances from properties in East Heckington; decreased height of the solar modules, utilisation of existing built form and tree vegetation, and the change to a single centralised onsite substation and ESS facility. Additional proposed landscape mitigation includes planting of a new hedgerow of varied height along the perimeter of the Energy Park site to break up lines of sight between the nearby visual receptors and the interior of the Energy Park. In general, this hedgerow would be grown and maintained at approximately 3 - 3.5m in height (with some taller sections of 5m).

7.1.17 As part of the Applicant's assessment, they also reviewed a number of NSIP and TCPA 1990 scale projects within the county, at varying distances from the HFSP. The potential significant cumulative landscape character effects relating to two approved solar energy projects at Vicarage Drove and land west of Cowbridge Road, Bicker Fen, Boston, where identified as being relevant to the ES Landscape and Visual chapter due to their context, inter-visibility, and geographical relationship with the Proposed Development. It was noted that for these significant effects to occur, construction work for these two solar schemes would have to coincide with the construction of the Offsite Cable Route Corridor and the National Grid Bicker Fen Substation extension works. No cumulative effects during the operational phase of the Proposed Development where identified.

7.1.18 The Landscape Consultant appointed by LCC has reviewed the information presented within the ES and has commented that in general the LVIA and the associated figures, appendices and documents provide a thorough analysis of the proposal. The collective assessment is considered thorough, easy to navigate and largely complies with best practice methodology although the Applicant's conclusion that only Major or Moderate-Major effects should be considered as Significant is not a standard conclusion and so does somewhat downplay the impacts of the development. In line with the Landscape Institute Guidance, LCC's position is that all effects assessed as being Moderate and above should be considered as Significant and as a result we do have concerns and dispute some of the conclusions made at this stage regarding the landscape and visual impact.

7.1.19 The rationale for both the selection of viewpoints and the omission for others is explained and whilst the 3km study area is considered appropriate, given the open nature of the landscape, there is the possibility of long-range and intermittent views to be gained by receptors beyond the study area and these cannot be ignored. Although LCC agrees within the Applicant's assessment that the construction phase would result in short-term significant adverse effects and that these would revert to

minor-adverse (and therefore not significant) during the operation phase outside of a distance of 500m from the Energy Park, again given the open nature of the landscape, then whilst this might be the case more generally, this statement does appear to be too generalised given the open nature of the landscape and therefore potential to afford long-distance views.

7.1.20 Overall, and notwithstanding that the ES, appendices and figures provide a clear process of assessment, by reason of its mass and scale, the HFSP would lead to significant adverse effects upon landscape character and visual amenity. The development would transform the local landscape by affecting the current openness, tranquillity, and agricultural character of the area and would also lead to significant adverse effects on views from receptors as a result of changing views of an agricultural or rural landscape to that of a landscape containing large scale solar development. From close range views, the HFSP has been identified in the LVIA as resulting in a significant change to high and medium sensitivity receptors, including several along the A17 and A1121 corridors, as well as the isolated farmsteads along the B1395. The area is predominantly flat which would help to limit long distance views, however, with limited existing vegetation cover long distance and intermittent views of the site and the development could still be possible especially from the railway line, which follows the A1121 before heading towards Heckington to the south of the site along Heckington Fen. The Council therefore concludes that both construction and operational landscape and visual impacts of the Proposed Development will be **negative**.

7.1.21 LCC also has concerns about the cumulative landscape and visual effects of the Proposed Development when assessed alongside other proposed NSIP scale projects being promoted in the area - in particular the Beacon Fen Energy Park which at its closest will be located around 2.9km north west of the HFSP. The Applicant's cumulative assessment will need to be updated to take into account that project as further details emerge however the Council's view is that **negative** cumulative impacts are likely to arise when this project is considered in conjunction with the proposed Beacon Fen Solar Park.

7.2 Residential Visual Amenity

Key Policies

- CLLP Policy S53 - Design and Amenity
- SELLP Policy 3 - Design of New Development

7.2.1 CLLP Policy S53 (Design and Amenity) states that development should be compatible with neighbouring land uses and not result in likely conflict with existing uses unless it can be satisfactorily demonstrated that both the ongoing use of the neighbouring site will not be compromised, and that the amenity of occupiers of the new development will be satisfactory with the ongoing normal use of the neighbouring site. In addition to this, buildings should not result in harm to people's amenity

either within the proposed development or neighbouring it through overlooking or overshadowing.

7.2.2 SELLP Policy 3 (Design of New Development) states that development proposals will be required to demonstrate, where relevant, how visual closure, landmarks, and views will be secured.

7.2.3 A Residential Visual Amenity Assessment (RVAA) was carried out by the Applicant. This is a detailed assessment of the visual effects upon the nearby residential receptors associated with the settlement of East Heckington and other nearby properties identified within the 1km radii study area from the boundaries of the Energy Park. Due to the construction of the residential receptors in East Heckington, and the long-term nature of the proposed Energy Park, the Applicant considers this part of the Proposed Development to be relevant in terms of RVAA issues and potential overbearing effects. The proposed Offsite Cable Route Corridor would be underground during the operational stage of the Proposed Development, and the existing National Grid Substation extension will be located on a discreet area of land, away from any nearby residential receptors, to cause any major significant or overbearing effects.

7.2.4 The assessment notes that it is a widely accepted and long held planning principle that no individual person has a private right to a view however, there are situations where the effect on the outlook or the visual amenity of a residential property and associated living conditions would be so great that it would not be considered in the public interest to permit such conditions to occur where they did not previously exist. This is a high threshold in terms of what would be regarded as 'unacceptable' in relation to residential visual amenity, and the impact for large scale solar PV developments of low vertical elevation is relatively novel. This threshold has become widely known as the 'Lavender Test' (established through the Carland Cross Windfarm Appeal - reference APP/D840/A/0921030260). This 'test' requires that the magnitude of change and the scale of effects must be of such a degree (in terms of being overbearing and overwhelming) that a property would become widely regarded as an unattractive place to live.

7.2.5 As part of the RVAA assessment, 105 letters were sent to relevant residential properties identified based upon postcode data, to request access to the individual properties, curtilages, and private gardens for the assessment. 9 residential properties responded to the request and were included within the scope of the RVAA. Where no response was received, 'proxy viewpoints' were undertaken from publicly accessible locations.

7.2.6 The sensitivity of areas within these residential properties were then graded as either high, medium, or low. High sensitivity areas might include views from ground floor windows on principal elevations likely corresponding to primary living rooms such as a lounge or kitchen, and views from rear gardens where an appreciation of the surrounding landscape is likely to be fundamental to the enjoyment of the space. Medium sensitivity areas included views from upper floor windows likely

within bedrooms or study/office spaces, and front gardens with a reduced 'landscape appreciation' role. Finally, areas of low sensitivity within these residential properties included views from side windows (e.g. from a utility room or bathroom), and purely functional areas such as driveways.

7.2.7 Taking account of the previous sensitivity assessment, the Energy Park site layout, orientation of properties, and the presence of any screening or intervening structures, the Applicant's RVAA identified that the proposed Energy Park would result in major adverse visual effects on 22 individual or clustered properties.

7.2.8 The layout of the proposed Energy Park incorporates a number of built-in mitigation measures (including an increased physical separation distance from nearby residential properties; reduction in panel height; and the relocation of the onsite substation and ESS facility to the centre of the site) in an attempt to reduce the visual effects. In addition to these, in order to reduce the anticipated visual effects on the identified properties to 'moderate', the proposed Energy Park would be enclosed by 3 - 3.5m tall native hedgerows (5m tall in some sections) along its perimeter, in order to break the lines of sight between the edge of the site and the identified residential receptors from ground floor windows and amenity gardens. It should be noted however, that this benefit would only be present from year five onwards once the hedgerows had become established.

7.2.9 Through the RVAA, the Applicant determined that none of the 22 identified properties would be subject to any overbearing effects and therefore 'pass' the Lavender Test (i.e. these properties would continue to provide an attractive outlook and good living environment, from a visual point of view, albeit affected by the proposed Energy Park site).

7.2.10 The Council concludes that even with the built-in mitigation measures, the magnitude of change means that construction and operational visual amenity impacts on the 22 identified properties would be **negative**.

7.3 Ecology and Ornithology

Key Policies

- CLLP Policy S14 - Renewable Energy
- CLLP Policy S59 - Green and Blue Infrastructure Network
- CLLP Policy S60 - Protecting Biodiversity and Geodiversity
- CLLP Policy S61 - Biodiversity Opportunity and Delivering Measurable Net Gains
- CLLP Policy S66 - Trees, Woodland and Hedgerows
- SELLP Policy 3 - Design of New Development
- SELLP Policy 28 - The Natural Environment

7.3.1 CLLP Policy S14 (Renewable Energy) states that the proposals for renewable energy schemes, including ancillary development, will be supported where the direct,

indirect, individual and cumulative impacts are, or will be made, acceptable, including in relation to biodiversity and geodiversity considerations.

7.3.2 CLLP Policy S59 (Green and Blue Infrastructure Network) states that the Central Lincolnshire Authorities will safeguard green and blue infrastructure from inappropriate development and work actively with partners to maintain and improve the quantity, quality, accessibility and management of the green infrastructure network. This policy also notes that proposals that cause loss or harm to the green and blue infrastructure will not be supported unless the need for and benefits of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be supported if suitable mitigation measures for the network are provided.

7.3.3 Policy S60 (Protecting Biodiversity and Geodiversity) states that development proposals will be considered in the context of the relevant Local Authority's duty to promote the protection and recovery of priority species and habitats. Where adverse impacts are likely, development will only be supported where the need for and benefits of the development clearly outweigh these impacts. In such cases, appropriate mitigation or compensatory measures will be required.

7.3.4 Development will only be supported where the proposed measures for mitigation and/or compensation, along with details of net gain, are acceptable. All development should:

- Protect, manage, enhance and extend the ecological network of habitats, species and sites of international, national and local importance (statutory and non-statutory);
- Minimise impacts on biodiversity and features of geodiversity value;
- Deliver measurable and proportionate net gains in biodiversity in accordance with policy S61; and
- Protect and enhance the aquatic environment within or adjoining the site, including water quality and habitat.

7.3.5 CLLP Policy S61 (Biodiversity Opportunity and Delivering Measurable Net Gains) states that all qualifying development proposals must deliver at least a 10% measurable biodiversity net gain (BNG) attributable to the development. The net gain should be calculated using Natural England's Biodiversity Metric and be provided on-site where possible. Unless specifically exempted by Government, a biodiversity gain plan should be submitted providing clear and robust evidence for biodiversity net gains and losses. This plan should also include details of the pre-development biodiversity value of the onsite habitat, the post-development biodiversity value of the onsite habitat following implementation of the proposed ecological enhancements/interventions, and an ongoing management strategy for any BNG proposals.

7.3.6 CLLP Policy S66 (Trees, Woodland and Hedgerows) states that planning permission will only be granted if the proposal provides evidence that it has been subject to

adequate consideration of the impact of the development on any existing trees and woodland found on-site. Proposals for new development will also be expected to retain existing hedgerows where appropriate and integrate them fully into the design, having regard to their management requirements.

7.3.7 SELLP Policy 3 (Design of New Development) states that development will be required to demonstrate, where relevant, how the incorporation of existing hedgerows and trees, and the provision of appropriate new landscaping to enhance biodiversity and green infrastructure, will be secured.

7.3.8 SELLP Policy 28 (The Natural Environment) states that gaps in the ecological network will be addressed by ensuring that all development proposals provide an overall net gain in biodiversity. This can be achieved by:

- Protecting the biodiversity value of land, buildings and trees (including veteran trees) minimising the fragmentation of habitats;
- Maximising the opportunities for restoration, enhancement and connection of natural habitats and species of principal importance;
- Incorporating beneficial biodiversity conservation features on buildings, where appropriate, and maximising opportunities to enhance green infrastructure and ecological corridors, including water space; and
- Conserving and enhancing biodiversity or geodiversity conservation features that will provide new habitat and help wildlife to adapt to climate change.

7.3.9 The Applicants assessment confirms that the main Energy Park site is comprised of flat, low-lying farmland in intensive arable winter wheat-production, subdivided into rectilinear field parcels by long, linear tracks, grass margins and drainage ditches. Some of the ditches support occasional shrubs and trees, reeds and emergent aquatic vegetation and there are intermittent hedgerows forming additional boundary features in places. Tree cover is limited to four small plantation woodland blocks and one line of trees within the centre of the Energy Park. The proposed grid connection corridor comprises of largely similar intensively farmed arable land.

7.3.10 Extended Phase 1 surveys of the Main Energy Park and Cable Route Corridor have been carried out and individual species surveys conducted in relation to bats, breeding and wintering birds, great crested newts, badgers, water vole and otters. In terms of habitats, the surveys confirm that there are no internationally important statutory designated sites (Ramsar, SAC & SPA) within 10km of the Energy Park Site, and the nearest Site of Special Scientific Interest (SSSI) is Horbling Fen SSSI located 11.5km to the southwest of the Energy Park. In addition there are no non-statutory designations within the Energy Park Site. There are four Local Wildlife Sites (LWS) within 5km of the Energy Park Site these being South Forty Foot Drain LWS; the Great Hale Eau; Broadhurst Drain East and Old Forty Foot Drain. These are all located between 1.5 and 4km south of the Energy Park Site and increases to 9 LWS's within 5km of the Grid Connection Route.

7.3.11 In terms of individual species, static bat surveys record up to maximum of 12 species of bat using the site with the vast majority being common pipistrelle. Breeding bird surveys recorded a total of 68 species with these mainly being common farmland birds nesting the banks of drainage ditches, woodland, Copse and farm buildings or along hedgerows. Three Schedule 1/Annex I species was found breeding in the area during the surveys - one pair of marsh harrier, three pairs of barn owl and one pair of kingfisher, and a further twelve Birds of Conservation Concern (BOCC)/Red List species were also recorded. This increased to 9 and 13 species respectively during wintering bird surveys.

7.3.12 In terms of Biodiversity Net Gains (BNG), it is stated that the project aims to deliver 424ha of grazing species grass with nearly 67ha of species rich grassland being located to a dedicated BNG area in the north of the site and along field boundaries. Approximately 2.15ha of wildflower mix would be secured as part of a Community Orchard and about 8.5 linear kilometres of hedgerow would be secured. Overall the Applicants Metric assessment estimates that the development would secure a 102% BNG increase in habitat units and a 230% BNG in hedgerow units relative to the existing baseline.

7.3.13 The Applicant's assessment identifies generally minor adverse construction impacts for boundary habitats, woodland blocks, breeding birds and aquatic areas within the Energy Park and proposes that these would be mitigated through a Construction Environmental Management Plan (CEMP) – to be secured as part of the DCO. Minor adverse effects are predicted for works along the cable corridor and temporary minor beneficial/positive effects are predicted for a number of species benefitting from seeding of watercourse boundaries, including breeding birds. As LCC does not have an in-house ecologist we do not dispute the Applicants conclusions in terms of effects at this stage. Therefore LCC recommend that the ExA take into account any specific technical advice and views of those bodies, persons and organisations who have expertise in this area such as comments offered by NKDC (who have commissioned external advice from an ecologist), Boston Borough Council, Natural England and the Lincolnshire Wildlife Trust. Notwithstanding this position, given the Applicants own findings the Council considers that the construction effects arising from this development would be **negative.** In terms of BNG, the Applicants own assessment has identified a potential to achieve well in excess of the 10% gain that is advocated at a national level and so if this is secured and delivered then this would be a **positive** impact of the development.

7.4 Hydrology, Hydrogeology, Flood Risk and Drainage

Key Policies

- CLLP Policy S12 - Water Efficiency and Sustainable Water Management
- CLLP Policy S14 - Renewable Energy
- CLLP Policy S21 - Flood Risk and Water Resources
- CLLP Policy S59 - Green and Blue Infrastructure
- SELLP Policy 2 - Development Management

- SELLP Policy 3 - Design of New Development
- SELLP Policy 4 - Approach to Flood Risk

7.4.1 CLLP Policy S12 (Water Efficiency and Sustainable Water Management) states that in addition to the wider flood and water related policy requirements of policy S21, all residential or other development comprising new buildings with outside hard surfacing, must ensure such surfacing is permeable (unless there are technical and unavoidable reasons for not doing so).

7.4.2 CLLP Policy S14 (Renewable Energy) states that proposals for renewable schemes, including ancillary development, will be supported where the direct, indirect, individual, and cumulative impacts of development on flood risk are, or can be made, acceptable. There are no further references to flood risk under the 'additional matters for solar based energy proposals' subheading of this policy.

7.4.3 CLLP Policy S21 (Flood Risk and Water Resources) states that all development proposals will be considered against the NPPF, including application of the sequential and, if necessary, the exception test. Proposals should demonstrate that they are informed by and take account of the best available information from all sources of flood risk and by site specific flood risk assessment where appropriate; that the development will be safe during its lifetime taking into account the impacts of climate change; how the wider scope for flood risk reduction has been positively considered; and that they have incorporated Sustainable Drainage Systems (SuDS)/Integrated Water Management into the proposals, unless they can be shown to be inappropriate.

7.4.4 CLLP Policy S59 (Green and Blue Infrastructure Network) states that proposals that cause loss or harm to the green and blue infrastructure network will not be supported unless the need for and benefits of the development demonstrably outweigh any adverse impacts.

7.4.5 SELLP Policy 2 (Development Management) states that proposals requiring planning permission for development will be permitted provided that sustainable development considerations are met, specifically in relation to any impact upon sustainable drainage and flood risk. Similarly, SELLP Policy 3 (Design of New Development) states that development proposals will be required to demonstrate, where relevant, how the mitigation of flood risk through flood-resilient design and SuDS will be secured.

7.4.6 SELLP Policy 4 (Approach to Flood Risk) states that development proposals within an area at risk of flooding (Flood Zones 2 and 3) will be permitted where the application is supported with a site-specific flood risk assessment, covering risk from all sources including the impacts of climate change, and which:

- Demonstrates that the vulnerability of the proposed use is compatible with the flood zone;

- Identifies the relevant predicted flood risk level, and mitigation measures that demonstrates how the development will be made safe;
- Incorporates the use of SuDS (unless it is demonstrated that this is not technically feasible) and confirms how these will be maintained/managed for the lifetime of development;
- Demonstrates that the proposal will not increase risk elsewhere and that opportunities through layout, form of development and green infrastructure have been considered as a way of providing flood betterment and reducing flood risk overall; and
- Ensures suitable access is safeguarded for the maintenance of water resources, drainage, and flood risk management infrastructure.

7.4.7 The Applicant's Flood Risk Assessment (FRA) states that the Proposed Development is located a few metres above sea level on land that generally slopes very gently towards the north / north east. The lowest point within the proposed Energy Park site is identified at 0.77m AOD along the northern boundary, whilst the highest point is 3.3m AOD along the southern boundary. AOD levels at the existing National Grid Bicker Fen Substation are approximately 2m.

7.4.8 As mentioned in the assessment, the Environment Agency's (EA) flood map indicates that the majority of the Proposed Development lies within Flood Zone 3 ('high probability' – land which has a 1 in 100 or greater annual probability of fluvial flooding). The Head Dike and Skerth Drain, which bound the Energy Park site along its northern boundary are identified by the EA as the source of flooding for this part of the Proposed Development. The South Forty Foot Drain is identified as the flooding source for the Offsite Cable Route Corridor and the National Grid Bicker Fen Substation. These principal watercourses are characterised by fluvial defences in the form of earth embankments. The EA's 'Flood Risk from Surface Water' map indicates that the majority of the Energy Park site, the Offsite Cable Route Corridor, and the National Grid Bicker Fen Substation are at 'very low' risk of surface water flooding.

7.4.9 The FRA finds that construction activities have the potential to impact upon the surface water drainage regime and increase surface water run-off from the Proposed Development, as well as give rise to the contamination of surface water as a result of spilled hydrocarbons and petrochemicals. The assessment also notes that construction works in close proximity to the flood defences have the potential to affect the stability of the embankments and therefore the structural integrity of the defences. The significance of these likely effects is considered to be negligible and therefore not significant, on account of embedded mitigation measures that are either 'built-in' to the proposals from the offset or secured through a DCO requirement.

7.4.10 During the operational phase of the Proposed Development, the assessment finds that an increase in the impermeable area within the Energy Park site has the potential to increase surface water run-off to the adjacent drains, increasing potential flood risk elsewhere. The assessment also notes that the raising of ground

levels to locate flood-sensitive infrastructure above the flood level has the potential to reduce the volume of storage available within the floodplain. Again, the Applicant considers these effects to be negligible and therefore not significant in light of embedded mitigation measures and the Proposed Development being located within a significant expanse of floodplain. The operational phase of the Offsite Cable Route Corridor and National Grid Bicker Fen Substation were not scoped out as part of the assessment due to a lack of identified operational impacts.

7.4.11 The design philosophy that underpins the Proposed Development includes a number of measures to prevent, reduce, and offset any significant adverse effects upon hydrology, hydrogeology, flood risk and drainage. These 'built-in' and additional mitigation measures are proposed to be secured through implementation of a Construction Environmental Management Plan (CEMP) under Requirement 13 of the DCO. Likely mitigation measures would include:

- Management systems and best practice working methods to manage water pollution and adverse impacts upon the surface water drainage regime;
- Appropriate storage of hydrocarbons and petrochemicals in accordance with Control of Substances Hazardous to Health (COSHH) Regulations 2002, and Control of Pollution (Oil Storage) (England) Regulations 2001;
- Laying of cables at a sufficient depth beneath watercourses/drains to avoid causing damage to the integrity of flood defence embankments;
- Implementation of SuDS (i.e. swales); and
- Elevated floor levels and flood resilient construction measures.

7.4.12 The assessment also notes that the construction and operation of the Proposed Development could occur simultaneously with other NSIP and TCPA 1990 scale schemes located in the vicinity. The Applicant highlights that as part of compliance with local and national planning policy, these other developments will be required to demonstrate that flood risk is not increased, that the surface water drainage regime and quality are not adversely affected, and that ground water aquifers are not affected. Without demonstrating this compliance, DCO consent/planning permission would not be granted, and construction could not commence. In this regard, the Applicant concludes that these schemes will not give rise to any significant effects and therefore there will be no cumulative effects in combination with the HFSP.

7.4.13 With the implementation of the outlined mitigation measures, the Applicant concludes that effects on the hydrology, hydrogeology, flood risk and drainage of the area would be negligible and therefore not significant. LCC as the lead local flood authority agrees with the principles of the FRA and the draft DCO includes appropriate conditions requiring detailed design of drainage to be approved by the Local Planning Authority prior to commencement of the Proposed Development. Subject to those details being acceptable, at this stage, the Council concludes that the impacts in relation to hydrology, hydrogeology, flood risk and drainage will be **neutral**.

7.5 Cultural Heritage

Key Policies

- CLLP Policy S57 - The Historic Environment
- SELLP Policy 2 - Development Management
- SELLP Policy 3 - Design of New Development
- SELLP Policy 29 - The Historic Environment

7.5.1 CLLP Policy S57 (The Historic Environment) states that development proposals are required to protect, conserve, and seek opportunities to enhance the historic environment of Central Lincolnshire. Proposals will be supported where they protect the significance of heritage assets (including where relevant their setting) and take into account the desirability of sustaining and enhancing non-designated heritage assets and their setting. In instances where a development proposal would affect the significance of a heritage asset (where designated or non-designated), the Applicant will be required to undertake and provide information on the significance of the asset; the impact of the proposed development on the significance and special character of the asset; and a clear justification for the works so that the harm can be weighed against public benefits.

7.5.2 This policy also states that where development proposals would result in less than substantial harm to a designated heritage asset, permission will only be granted where the public benefits, including, where appropriate, securing its optimum viable use, outweigh the harm. In addition to this, development affecting archaeological remains, whether known or potential, designated or undesignated, should take every practical and reasonable step to protect and, where possible, enhance their significance.

7.5.3 SELLP Policy 2 (Development Management) states that proposals requiring planning permission for development will be permitted provided that sustainable development considerations are met, specifically in relation to any impact upon or enhancement of historical buildings and heritage assets. Similarly, SELLP Policy 3 (Design of New Development) states that development proposals will be required to demonstrate, where relevant, how a sense of place will be created by complementing and enhancing designated and non-designated heritage assets.

7.5.4 SELLP Policy 29 (The Historic Environment) states that distinctive elements of the South East Lincolnshire historic environment will be conserved and, where appropriate, enhanced. Opportunities to identify a heritage asset's contribution to the economy, tourism, education, and the local community will be utilised, including the historic archaeological and drainage landscape of the Fens. As such, development proposals will be required to conserve and enhance the character and appearance of designated and non-designated heritage assets.

7.5.5 A Heritage Settings Assessment was undertaken in accordance with the industry-standard methodology provided by Historic England. A search area of a minimum

5km radius from the Proposed Development was applied for this assessment however, the proposed Energy Park site is deemed to have greater potential than the Offsite Cable Route Corridor to impact upon the significance of heritage assets through change to their setting. There are a total of 123 Listed Buildings located within this 5km radius (the majority being Grade II Listed), as well as eleven Scheduled Monuments. The Heritage Settings Assessment indicated that only three heritage assets could be sensitive to the construction and/or operation of the Proposed Development. These are:

- Scheduled Monument of settlement site 600m east of Holme House;
- Grade I Listed Building of Kyme Tower at South Kyme; and
- Non-Listed Mill Green Farmhouse.

7.5.6 The Applicant's assessment concludes that the land being considered for the Proposed Development does not contribute through setting to the significance of the Scheduled Monument settlement site and therefore no effect/harm is predicted to occur to the significance of this asset. The Energy Park site may be visible from the top floor and battlement of Kyme Tower, although it is not possible to gain access to confirm this as there is no surviving stairwell. As the geographical and topographical context of the Tower, and the current potential range of views from it, will not change, the Applicants suggests that no effect/harm is predicted to occur to the significance of this Grade I Listed Building.

7.5.7 The Energy Park site will also be visible in designed views from the Non-Listed Mill Green Farmhouse (particularly from the first-floor windows) however, it is considered that the significant and extensive change to the late 19th century landscape character will only result in minor (not significant) harm to the significance of this non designated asset. This is because the asset's significance is primarily derived from its built form (which will be unaffected by the Proposed Development).

7.5.8 The Energy Park site was also subject to extensive pre-determination archaeological evaluation using a mix of archaeological desk-based assessment, geophysical surveys, and trial trenching evaluation. A total of 962 trial trenches were excavated and recorded across the Energy Park, 194 of which contained archaeological features and deposits. The earliest archaeological activity found was a small assemblage of Mesolithic and Neolithic flints recovered from the northern area of the site. The trial trenching evaluation of the Energy Park identified much more Romano-British archaeology (including enclosures, a possible settlement, and evidence of salt processing) than had been indicated by the geophysical surveys, especially across the central and southern portions of the site. Evidence of post-medieval hunting activities were also found on the site in the form of a duck decoy pond.

7.5.9 There are no designated archaeological remains (e.g. Scheduled Monuments) located within the land being considered for the Proposed Development however, there are a number of known and potential non-designated built and archaeological

remains located within the Energy Park site which are regarded as either regionally or locally significant heritage assets. Whilst none of these are considered to be of the highest level of significance requiring preservation in situ, the upstanding boundary wall near Elm Grange, the cottages and barn of Six Hundreds Farm, and the drainage pump at Head Dike will all be retained within the Proposed Development through mitigation measures.

7.5.10 Construction works associated with the Proposed Development will most certainly have below-ground impacts such as soil compaction, reduction of the protective depths of topsoil and subsoil, and potential changes to the moisture levels and chemical composition of soils. These impacts may affect the survival of any archaeological and/or paleoenvironmental deposits contained therein. Construction activities could also remove, truncate, or compress the known and potential buried archaeological remains located within the Energy Park site. Due to their finite nature, the direct development effects upon the known and potential buried archaeological resource would be long-term, permanent, and adverse, with the two Mesolithic/Neolithic pits and the Roman saltern possibly being wholly destroyed by construction activities. The Applicant's devised mitigation strategy will seek to minimise impacts where possible on known below-ground archaeological assets.

7.5.11 Whilst the operational phase of the Proposed Development is considered to have no direct physical effects over and above that already identified at construction, the removal of ground-mounted infrastructure and plant movements during the decommissioning phase may result in further disturbance to shallow-buried archaeological deposits. These activities may result in further destruction of features that were partially destroyed during construction (and would therefore be considered significant in EIA).

7.5.12 LCC considers that sufficient evaluation (including trenching) has been undertaken on the proposed Energy Park site to inform an adequate mitigation strategy in respect of non-designated heritage assets. Trial trenching for the Offsite Cable Route Corridor commenced in July 2023 and as such, the results are not yet available to inform the Applicant's assessment. LCC considers these trial trenching results to be necessary in order to provide sufficient baseline data to be able to identify and assess potential development impacts, and for a mitigation strategy to be proposed. Notwithstanding the evaluation carried out to date, and whilst mitigation measures to ensure that any features within the Order Limits are appropriately recorded, the development would nevertheless have an impact on heritage assets (both above and below ground) and therefore consistent with the Applicant's own conclusions within the ES, agrees that the Proposed Development will have a **negative** impact on heritage assets.

7.6 Climate Change

Key Policies

- CLLP Policy S14 - Renewable Energy

- CLLP Policy S16 - Wider Energy
- CLLP Policy S53 - Design and Amenity
- SELLP Policy 31 - Climate Change and Renewable and Low Carbon Energy

7.6.1 CLLP Policy S14 (Renewable Energy) states that proposals for renewable energy schemes, including ancillary development, will be supported where the direct, indirect, individual, and cumulative impacts of development on a number of considerations are, or will be made, acceptable.

7.6.2 Paragraph 3.3.4 of the supporting text to policy S14 sets out that the aim of the Joint Committee that prepared the CLLP is to maximise appropriately located renewable energy generated in Central Lincolnshire. Policy S14 sets no floor or cap on the scale of renewable energy targeted to be generated, preferring, instead, an approach which supports all appropriate proposals that meet the policy requirements set out.

7.6.3 Paragraph 3.3.19 recognises that in order to support a move to a zero carbon Central Lincolnshire, there is a need to move away from fossil fuels (gas, petrol, diesel, oil) towards low carbon alternatives and this transition needs to take place with increasing momentum in order to stay within identified carbon saving targets. Demand for electrical energy is forecast to increase by 165% in Central Lincolnshire over the next 30 years and so electrical infrastructure in particular will need to adapt and change to accommodate this increased need for the management and storage of electricity. Energy storage (including battery storage), consideration of existing and new electricity substation, and energy strategies for large developments are required to help support the future energy infrastructure needs for Central Lincolnshire.

7.6.4 CLLP Policy S16 (Wider Energy Infrastructure) states that the Joint Committee is committed to supporting the transition to a net zero carbon future and, in doing so, recognises and supports, in principle, the need for significant investment in new and upgraded energy infrastructure. Support will be given to proposals which are necessary for, or form part of, the transition to a net zero carbon sub-region, which could include energy storage facilities and upgraded or new electricity facilities or other electricity infrastructure. This policy however caveats that any such proposals should take all reasonable opportunities to mitigate any harm arising from such proposals and take care to select not only appropriate locations for such facilities, but also design solutions (reference to policy S53) which minimises harm arising.

7.6.5 SELLP Policy 31 (Climate Change and Renewable and Low Carbon Energy) states that development of renewable energy facilities and associated infrastructure will be permitted provided, individually, or cumulatively, there would be no significant harm to the environment.

7.6.6 The Applicant's emissions assessment adopts a 'whole life' approach to calculating the Greenhouse Gas (GHG) emissions of the Proposed Development. This considers all the major lifecycle sources of GHG emission and includes both direct GHG

emissions as well as indirect emissions from activities such as the transportation of materials and embodied carbon with construction materials.

7.6.7 A likely worst-case country of origin of China has been assumed as a conservative estimate for products and equipment, with distances estimated from ports with a proximity to relevant manufacturing facilities in Shanghai. Corresponding HGV and sea freight distances of 350km and 21,900km respectively have been assumed by the Applicant for the transportation of materials.

7.6.8 A 1-way distance of 30km per journey has also been assumed for the worker transportation calculations, which is again a conservative estimate. Where possible, staff will reside much closer to the Order Limits, and employees not from the local area would stay in local accommodation.

7.6.9 The greatest GHG emissions during the construction phase is as a result of the embodied carbon contained within the construction materials which accounts for 96.3% of the total emissions during the construction phase. The total amount of GHG emissions during this phase of the Proposed Development is expected to equate to 269,000 tCO2e (tonnes of carbon dioxide equivalent) across the 30-month period (resulting in annual construction emissions of 107,000 tCO2e). GHG emissions from construction will fall under the 4th UK Carbon Budget which sets out an annualised carbon budget of 390,000,000 tCO2e. As the annual construction emissions would only relate to 0.028% of this annual UK budget, the Applicant considers that the construction of the Proposed Development will therefore have a negligible to minor adverse effect on the climate.

7.6.10 The greatest GHG emissions during the operational phase are estimated to result from maintenance activities associated with the embodied carbon of replacement parts and equipment (accounting for 93.1% of the total operational emissions). The total GHG emissions for the operational phase of the Proposed Development are estimated to equate to 292,000 tCO2e over its 40-year design life (or an average annual basis of 7,290 tCO2e per year of operation).

7.6.11 Over the 40-year operational lifetime, the Proposed Development is estimated to produce a cumulative energy generation of 14,000,000 MWh. Using the 2022 Grid Factor as the GHG emission intensity for the generation of this energy supply, it has been estimated that 1,910,000 tCO2e would be emitted in order to generate this equivalent amount of electricity from the projected grid energy mix. Based on this difference between the operational GHG emissions of the Proposed Development (292,000 tCO2e) and the estimated emissions that would result from sourcing the equivalent energy supply from the grid (1,910,000 tCO2e), it is therefore estimated that the Proposed Development would result in avoided emissions of 1,620,000 tCO2e.

7.6.12 The Applicant's assessment concludes that, even when taking a conservative approach, the estimated annual operational GHG intensity of the Energy Park is considerably less than the relevant annual projected decarbonised grid GHG

intensity. As such, the Applicant considers the operational phase of the Proposed Development on GHG emissions to have a moderate beneficial effect. However, the assessment does not account for GHG emissions associated with the recycling or disposal of components and panels at specialist disposal facilities at the decommissioning stage. Instead an assumption is made that all material is highly recyclable and that improvements in recycling technologies and efficiencies are likely to have occurred by the time decommissioning is to commence and that this would mitigate the impacts of initial embodied carbon produced for the first time use of the development.

7.6.13 Officers do not dispute the Applicants conclusions at this stage would agree that, adopting a 'whole life' approach, there would be significant **positive** impacts that would accrue in relation to GHG emission reduction.

7.7 Transport, Access and Public Rights of Way

Key Policies

- CLLP Policy S47 - Accessibility and Transport
- SELLP Policy 31 - Climate Change and Renewable and Low Carbon Energy
- SELLP Policy 33 - Delivering a More Sustainable Transport Network

7.7.1 CLLP Policy S47 (Accessibility and Transport) states that development proposals are required to contribute towards an efficient and safe transport network. All developments should demonstrate, where appropriate, that they have regard to the need to minimise additional travel demand through the use of travel planning, safe and convenient public transport, walking and cycling links, and integration with existing infrastructure. This policy also states that any development that has severe transport implications will not be granted planning permission unless deliverable mitigation measures have been identified, and arrangements secured for their implementation, which will make the development acceptable in transport terms.

7.7.2 SELLP Policy 31 (Climate Change and Renewable and Low Carbon Energy) states that development of renewable energy facilities and associated infrastructure will be permitted provided, individually, or cumulatively, there would be no significant harm to highway safety (including public rights of way).

7.7.3 SELLP Policy 33 (Delivering a More Sustainable Transport Network) states that Local Planning Authorities will work with developers to make the best use of, and seek improvements to, existing transport infrastructure and services within, and connecting to South East Lincolnshire. Development proposals are required to have regard to the need for better promotion and management of the existing transport network and the provision of sustainable forms of transport. In addition, this policy states that existing footpaths, cycle routes, and particularly public rights of way, will be protected from development.

7.7.4 Access to the proposed Energy Park during the construction and operational phases will be created via a new junction with the A17 to the south of the Energy Park site, approximately 900m northwest of the junction with Six Hundreds Drove. Whilst this proposed access is under construction, a temporary construction access point will be provided via an existing junction with the A17, approximately 600m southeast of the B1395 Sidebar Lane junction at Elm Grange.

7.7.5 Access for the construction of the Offsite Cable Route Corridor is proposed in two locations – one to the north of the South Forty Foot Drain via an existing junction with the A17 located approximately 430m north of the A17 - A1121 junction; and one to the south of the Drain via the Triton Knoll access with the A17. Localised access is also proposed via Royalty Lane and Timms Drove however, the Triton Knoll access will predominantly form the southern access for the Offsite Cable Route Corridor. Access to the existing National Grid Bicker Fen Substation is currently achieved via a haul road from the A52. This will not change as a result of the Proposed Development and therefore access for construction vehicles associated with the extension to the Substation will continue via this access, in line with the National Grid's existing arrangements.

7.7.6 The Applicant's assessment considered the baseline and predicted traffic flows for the estimated 30-month construction period at three 'link' locations along the A17 (located between the temporary and permanent access points for the Energy Park site). Baseline two-way daily traffic flow data collected in March 2022 recorded between 20,373 and 21,249 vehicle movements (all types) through these links. Of these, between 3,485 and 4,350 movements were attributable to HGV traffic.

7.7.7 The Applicant has estimated that during the course of the Proposed Development's construction period, a total of 11,082 (12,190 if allowing for a 10% contingency) HGV construction vehicles will require access to and from the Energy Park site. Of this estimation, 4,195 vehicles will relate to 'materials', 1,500 to the solar modules, and 1,200 to cabling. An allowance of 107 vehicles has also been made for escorting abnormal load deliveries (substation transformers and crane).

7.7.8 Assuming a 30-month construction period and a six-day working week (720 days total), there will be on average around 17 HGV deliveries (or up to 34 two-way movements) per day. This could be higher or lower at times depending on the stage of construction. A 10% contingency has also been applied to account for the fact that some deliveries could be made using smaller vehicles. Given the predicted maximum peak of 400 construction workers (average figure of 150) on the Energy Park site at any one time, the Applicant has estimated a total of 92 two-way movements per day on average (including the allowance of the 34 HGV trips) during these busiest construction periods. When compared to the recorded baseline flows of the assessed A17 links, the Applicant concludes a 'negligible' impact on the capacity and operation of the A17.

7.7.9 The Applicant has advised that in terms of the construction of the Offsite Cable Route Corridor, the majority of vehicles/machinery will generally be brought to the

site at the start of the project and stored overnight within a temporary fenced area in close proximity to where the construction works are being carried out. As such, the Applicant estimates that there will only be around five vehicles moving between the Energy Park and the Offsite Cable Route Corridor each day (ten two-way movements). The proposed access arrangements will seek to ensure that no vehicles associated with this construction will pass through the village of Bicker, as far as practicable. Should it however be necessary to route vehicles via Bicker, the Applicant determines that the number of vehicles are likely to be considered negligible and would be on a temporary basis.

7.7.10 There is not considered to be any underlying safety problems on the A17 close to the Proposed Development. The Energy Park access would operate a "left in - left out" only basis and banksmen can be made available if considered necessary at the site access point to indicate to drivers when it is safe to enter or exit the site access junction. The access arrangement would also enable HGVs to pull off the A17 in one movement and allow two HGVs to pass one another on the internal site access road, preventing the need for large vehicles to stop on the highway. The Offsite Cable Route Corridor will be accessed using existing junctions with the A17 or the A52 Bicker Road, none of which have a material highway safety problem. As such, it is therefore considered that there will be no increase in incidents associated with the temporary 30-month construction phase.

7.7.11 Once operational, it is anticipated that vehicle movements will not exceed five visits per day to the Energy Park site for equipment maintenance, tending of sheep, and maintenance of Biodiversity Net Gain Areas (including the community orchard); and is therefore considered to be a negligible impact on the local highway network. Decommissioning is expected to generate the same number of movements as construction (or potentially less as the underground cables will be left in situ) and is therefore also considered negligible by the Applicant.

7.7.12 A Construction Transport Management Plan (CTMP) will be implemented during the Proposed Development's construction phase in order to minimise the impact on local residents, businesses, and the highway network. The CTMP will contain a package of mitigation measures which are expected to include:

- A "left in - left out" arrangement at the permanent Energy Park site access;
- Provision of a contractor's compound within the site, providing an area for HGVs to park and manoeuvre, off the local highway;
- Control of HGV arrivals/departures by the site manager to ensure that no HGVs are required to wait on the public highway;
- Provision of (dry) wheel washing facilities for use before allowing vehicles to return to the local highway; and
- Generally agreed working hours of 08:00 - 18:00 Monday to Friday and 09:00 - 13:00 on Saturdays.

7.7.13 The Applicant also considered cumulative transport impacts associated with 15 other projects (primarily solar-related) located within Lincolnshire. The Applicant

concluded that due to these project sites being located some distance from the Energy Park, and the temporary nature of the Proposed Development's construction phase, it is not considered necessary to assess the cumulative transport and access impacts.

7.7.14 With reference to impacts on Public Rights of Way, there is only a single PRoW (HECK/15/1) which runs across the northern boundary of the Energy Park site. This footpath would remain open and useable throughout the entire lifetime of the Proposed Development (only being separated from the Energy Park by security fencing during the construction phase). Reinstatement of footbridges on the eastern and western boundaries of this footpath is currently under discussion between the LCC PRoW team, the EA, landowners, and the Black Sluice Internal Drainage Board. If an agreement is reached, the Applicant has stated that they will help facilitate the construction of these reinstated footbridges. In addition to this footpath, PRoWs Swhd/14/1 and Swhd/13/1 are located within the vicinity of the Offsite Cable Route Corridor. These two PRoWs boarder the north and south east of the South Forty Foot Drain for two kilometres respectively.

7.7.15 As part of the Proposed Development, a new community orchard (2.15ha in size) is being proposed in the south western corner of the Energy Park site and immediately north of the 'Build-A-Future East Heckington' facility. It is envisaged that this community orchard would not offer any additional areas of car parking in order to limit vehicular movement, disturbance to the adjacent school and Elm Grange residents, and avoid any additional congestion along the A17. The main function of the orchard would be to provide an area for BNG and also a new amenity space for the local community (including for use by the educational facility).

7.7.16 Public access in the area would be further enhanced with the creation of a new permissive path, linking to both Public Footpath HECK/15/1 and the proposed community orchard. The path would provide a circular route of about 4.2km in length across the western part of the Energy Park site. The Applicant advises that this permissive path will be open to the general public once construction of the Energy Park is completed and will remain open for the 40-year projected lifetime under legal agreement between the Applicant and the landowner.

7.7.17 LCC agrees that there are **positive** impacts associated with the provision of a new permissive footpath within the scheme insofar as it offers additional walking and recreational opportunities that extend and link to the PROW network. The actual enjoyment and value this route offers to users of this route is perhaps more subjective however given it passes through part of the solar park and so users would be exposed to vies of the panels and associated infrastructure for sustained periods as they use this route. Nevertheless the provision of, and access to, a community orchard is also another positive effect of the scheme overall especially as this can be accessed without restriction to users of the PROW route.

7.7.18 In terms of traffic and transport effects, as the Local Highway Authority, LCC deems the assessment within the 'Transport and Access' chapter of the ES to be

appropriate and that it provides a reasonable estimate of HGV and car traffic associated with the development during construction, showing that the impact will be within acceptable levels on the highway network. The draft DCO includes conditions requiring detailed design approval of access and parking to be approved by the Local Planning Authority prior to commencement. Therefore, if the DCO is granted then there would be an opportunity for the Highway Authority to review and ensure those details are acceptable before the development can commence. At this stage however, the Council concludes that traffic and transport impacts during the construction, operation, and decommissioning (subject to agreement of a CTMP) would be **neutral**.

7.8 Land Use and Agriculture

Key Policies

- CLLP Policy S14 - Renewable Energy
- CLLP Policy S67 - Best and Most Versatile Agricultural Land
- SELLP Policy 32 - Climate Change and Renewable and Low Carbon Energy

7.8.1 Under the subheading 'additional matters for solar based energy proposals', CLLP Policy S14 (Renewable Energy) states that proposals for ground based photovoltaics and associated infrastructure, including commercial large scale proposals, will be under a presumption in favour unless, amongst other things, the proposal is (following a site specific soil assessment) to take place on BMV agricultural land and does not meet the requirements of Policy S67.

7.8.2 CLLP Policy S67 (Best and Most Versatile Agricultural Land) states that proposals should protect BMV agricultural land so as to protect opportunities for food production and the continuance of the agricultural economy. Significant development resulting in the loss of BMV agricultural land will only be supported if:

- The need for the proposed development has been clearly established and there is insufficient lower grade land available;
- The benefits and/or sustainability considerations outweigh the need to protect such land, when taking into account the economic and other benefits of the BMV agricultural land;
- The impacts of the proposal upon ongoing agricultural operations have been minimised through the use of appropriate design solutions; and
- Where feasible, once any development which is supported has ceased its useful life, the land will be restored to its former use.

7.8.3 SELLP Policy 31 (Climate Change and Renewable and Low Carbon Energy) states that the development of renewable energy facilities and associated infrastructure will be permitted provided, individually, or cumulatively, there would be no significant harm to agricultural land. Provision should be made for post-construction monitoring, and removal of the facility and reinstatement of the site if the development ceases to be operational.

7.8.4 The agricultural land quality within the Energy Park was assessed using a system of Agricultural Land Classification (ALC). This system is based on the long-term physical limitations for agricultural use and recognises climate, site, and soil characteristics (and the important interactions between them) as factors which can affect the 'grade' of the agricultural land. The ALC system divides land into five grades (1 to 5), with grade 3 divided into subgrades 3a and 3b. The NPPF places grades 1, 2 and 3a within the definition of 'best and most versatile agricultural land'. Natural England estimates that 42.0% of the agricultural land in England is of BMV quality.

7.8.5 Sampling across the Energy Park site was carried out in two stages, in consultation with Natural England and NKDC. Initially, a semi-detailed ALC was carried out involving sampling on a regular 200m by 200m grid (resulting in 138 auger samples being taken across the northern part of the site). A further 313 samples were taken in August and September 2022, covering most of the area identified as BMV in the semi-detailed survey. These additional samples showed a more complex mix of grades across the majority of the Energy Park and brought the total number of auger samples to 451 sampling points across 589ha.

7.8.6 It was agreed that the Offsite Cable Route Corridor would not be subject to an ALC assessment as it only involves temporary disturbance of the soils to enable a trench to be dug and the cabling to be inserted. Therefore, construction of the Offsite Cable Route Corridor would not involve the sealing or downgrading of the land quality.

7.8.7 Some of the agricultural fields were identified as a complex mix of ALC grades, which significantly affects the potential for farming the different land grades in a different manner. In light of this, the Proposed Development has been amended and the area for the Energy Park site reduced. Fields to the south and west (mostly ALC grades 1 and 2) have been excluded from the site, resulting in a reduced area of 524ha for the Energy Park site. The proposed site no longer includes any fields which are wholly Grade 1 or 2.

7.8.8 The soil sampling identified that 49.0% of the site (an area of 257ha) falls within the BMV category (ALC grades 1, 2 and 3a). This is split into 11.1% (58ha) of grade 1 land, 7.4% (39ha) of grade 2 land, and 30.5% (160ha) of grade 3a land. The remaining 51.0% of the Energy Park site is split between grade 3b agricultural land (50.6% / 265ha) and non-agricultural land (0.4% / 2ha).

7.8.9 Through a desktop exercise using published mapping, the Applicant's assessment also considered the relative proportions of ALC across both Lincolnshire and North Kesteven. It was noted that across Lincolnshire the estimated amount of BMV agricultural land as a proportion of all ALC grades is 71.2% (split between 14.6% grade 1, 36.0% Grade 2, and 20.6% Grade 3a). In comparison, across North Kesteven the estimated amount of BMV agricultural land is slightly lower at 67.0% (split between 1.4% Grade 1, 44.9% Grade 2, and 20.7% Grade 3a).

7.8.10 The Applicant highlights that there should be no direct loss (permanent sealing or downgrading of land quality) caused by the installation of the PV arrays on the Energy Park site. Only those areas of land proposed for the fixed infrastructure (e.g. the onsite substation, energy storage system, and access tracks) should be treated as sealed-over or irreversibly lost. This amounts to a total of 20.2ha of agricultural land (2.8ha of which is BMV land).

7.8.11 A cumulative agricultural land impact assessment was undertaken by the Applicant, considering the effects of 16 NSIP and TCPA scale schemes (primarily solar) across NKDC, BBC, and the wider county. The timing of this assessment meant that it did not however account for three further solar NSIP schemes that are now proposed in the district (Springwell, Beacon Fen and Fosse Green). This assessment notes that if all of the assessed schemes were to gain planning consent alongside the HFSP, and all of the land within the applications' redlines was used for solar development, the total use of agricultural land would amount to 5,950ha (of which approximately 4,200ha would be BMV land). It can therefore be concluded that if all of the 16 schemes became operational and none carried out any ongoing agricultural practices within their application sites for their operational lifetimes, 1% of Lincolnshire's agricultural land (and 1.2% of its commercially farmed area) would be used for solar production.

7.8.12 A Farming Report has also been submitted by the Applicant which sets out the practical limitations to wider-scale farming of the agricultural land in which the proposed Energy Park site will be located. This report draws attention to the farm's significant blackgrass problem (a perennial arable weed), in addition to the land's division by deep ditches which cause a physical barrier between fields (with usually only a single bridge entry point to most fields). The Applicant argues that whilst this block of farmland within the Energy Park site covers 524ha, in the context of England and regional production, the effect of non-production of arable crops from this area will be modest (the utilised agricultural area of England in 2022 was 8.9 million ha, 55% of which was croppable (some 4.9 million ha)).

7.8.13 The land management and farm enterprises will inevitably change for the duration of the Proposed Development's lifetime. Continued agricultural use of the land within the Energy Park is however possible by using it for grazing sheep and grassland management (especially to encourage nesting and flowering). The use of land under and around solar panels for sheep grazing is common as it is an effective way to manage the grass, provide an income, and improve soil nutrient value. The details within the Farming Report suggest that sheep farming labour is comparable to cereals production and that the overall sheep enterprise could be made up of 4 ewes per ha (resulting in approximately 2,000 breeding ewes across the Energy Park site). With a typical rearing percentage of 1.65% lambs per ewe, this would equate to 3,300 lambs being produced per year for food production across the site.

7.8.14 LCC acknowledges that the development has been revised to remove areas of BMV land and it is proposed to graze sheep on the land in lieu of the current arable use. Despite this a large proportion of BMV land would be 'lost' due to the presence of

the solar panels and equipment as this would take this land out of productive arable use. Although an agricultural enterprise may still be carried out on the land (e.g. sheep grazing) at this stage it is unclear how this would be secured as part of any DCO and there is uncertainty and ambiguity in the current drafting of the Outline Landscape and Ecology Plan submitted as part of the application (which is indicates this would be secured) about exactly who will be responsible for managing any sheep, a commitment to exact herd densities and whether this would be implemented for the life of the development. As a result, LCC has concerns about the impact of the development in terms of the loss of productive arable farmland not only from this site but also when considered in combination with a large number of other NSIP scale projects that are not only being promoted across the County but also within the same District. As such, the LCC's position is therefore that the construction, operational and decommissioning impacts holistically across land use and agriculture are **negative**.

8. Conclusions

8.1 This LIR has undertaken a consideration of several likely issues and impacts that LCC considers will arise from the construction and operation of the HFSP in so far as it affects Lincolnshire. The report has identified positive, neutral and negative effects at this stage.

8.2 The HFSP, by its nature, offers positive impacts in terms of the production of clean renewable energy and the UK's transition towards Net Zero as well as the potential to deliver significant biodiversity net gain through the creation of mitigation and enhancements proposed as part of the development. The scheme also offers an opportunity to extend recreational routes in the area as an extension to the current PROW network and includes access to a new community orchard which would be open to users of the PROW network and others (by arrangement). Whilst the Council recognises these potential benefits, there are also a number of negative impacts which would need to be balanced against these positives. These negative impacts have been identified by the Applicant themselves and exist across the majority of the topics/matters covered by the ES. Although some of these impacts may be capable of being reduced, mitigated or off-set and/or addressed through the submission of information as part of subsequent DCO Requirements (should the DCO be confirmed), the negative impacts of most significance and concern to LCC are those in relation to landscape and visual impact and the impact of the development on best and most versatile agricultural land not only arising from this scheme itself but also when considered cumulatively and in-combination with the loss of land from other NSIP scale solar developments that are also being promoted both within the District but also across Lincolnshire.

8.3 LCC requests that the ExA and SoS have regard to this Local Impact Report when making its decision in addition to any further written representations that LCC may wish to make during the Examination and at Issue Specific Hearings relating to matters that are not contained within this LIR.

Appendix B – Comments from LCC appointed landscape consultants (AAH)

LANDSCAPE AND VISUAL REVIEW

OF THE DEVELOPMENT CONSENT ORDER (DCO) APPLICATION

FOR THE HECKINGTON FEN SOLAR PROJECT

FOR

LINCOLNSHIRE COUNTY COUNCIL

September 2023

Landscape and Visual Review

Quality Assurance – Approval Status

Version	Date	Prepared by	Checked by	Approved by	Version Details
1	15/09/2023	Kevin Gillespie	Tom Ferraby	Oliver Brown	Initial Draft for client comment
2	26/09/2023	Kevin Gillespie	Paul Booth	Oliver Brown	Issued for client
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Landscape and Visual Review

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Appendices:

Appendix A: Previous AAH Consultation documents:

AAH TM01 Viewpoint comments 05/05/22

AAH TM02 Viewpoint comments 31/05/22

AAH TM03 PEIR comments 02/08/22

AAH TM04 RR Comments 07/06/23

Appendix B: Landscape Institute Technical Guidance Note 1/20 (10 Jan 2020): *Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs).*

Figures:

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1.0 Introduction

Purpose of the Landscape and Visual Review

1.1 AAH Consultants (**AAH**) has been commissioned to prepare a review of the Landscape and Visual elements of the Development Consent Order (**DCO**) Application for the Heckington Fen Solar Project (the '**Development'**), submitted to the Planning Inspectorate in March 2023, on behalf of Lincolnshire County Council (**LCC**). This follows on from AAH providing landscape and visual consultation with the developer and design team on behalf of LCC at the Pre-Application stage of the project, with AAH correspondence (in the format of Technical Memos) provided within **Appendix A**.

1.2 The purpose of this report is to carry out an independent review of the landscape and visual elements of the DCO submission, with a focus on a review of the Landscape and Visual Impact (**LVIA**) chapter of the Environmental Statement (ES), which is based on the guidance provided within the Landscape Institute *Technical Guidance Note 1/20 (10 Jan 2020): Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs)*, which is included within **Appendix B.**

1.3 This report will be utilised to inform and guide LCC input into further stages of work through the Examination of the application for a DCO for the Development, which is a Nationally Significant Infrastructure Project (**NSIP**). This is likely to include input into Local Impact Reports (**LIR**) and Statements of Common Ground (**SoCG**), as well as formal requests for information that may be required through the Examination or at any associated hearings.

About AAH Planning Consultants and The Author

1.4 AAH Consultants comprises professional and accredited individuals. Our consultants are chartered members of the Landscape Institute (LI) and the Royal Town Planning Institute (RTPI).

1.5 This review has been prepared by Kevin Gillespie, who is a Chartered Landscape Architect within AAH with over 20 years' experience in landscape design and assessment.

Relevant Documents

1.6 The Landscape and Visual review is based on the following documents (including sub-appendices) submitted to the Planning Inspectorate, which are available at:

- https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010123/EN010123-000343-Examination%20Library.pdf
- https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010123/documents
- Environmental Statement Chapter 6: Landscape and Visual Impact Assessment February 2023;
- Chapter 6 Appendices:
    - Appendix 6.1 LVIA Methodology (document reference 6.3.6.1);
    - Appendix 6.2 Omitted Viewpoints A1 and A3 at Great Hale Fen (document reference 6.3.6.2);

- Appendix 6.3 Arboricultural Survey, Impact Assessment and Protection Plan (document reference 6.3.6.3);
- Appendix 6.4 Extract from National Character Area 46 The Fens (document reference 6.3.6.4);
- Appendix 6.5 Extract from the North Kesteven Landscape Character Assessment (document reference 6.3.6.5);
- Appendix 6.6 Extract from the Landscape Character Assessment of Boston (document reference 6.3.6.6);
- Appendix 6.7 Scoping Out – Landscape Character Receptors (document reference 6.3.6.7);
- Appendix 6.8 Scoping Out - Visual Assessment (document reference 6.3.6.8);
- Appendix 6.9 Detailed Visual Assessment (document reference 6.3.6.9);
- Appendix 6.10 Summary of Section 42 Consultation Responses since PEIR (document reference 6.3.6.10).
- Appendix 6.11 Legislative and Policy Framework (document reference 6.3.6.11).
- Appendix 7.4 Design and Access Statement

Chapter 6 Figures:

- Figure 1.1 Order Limits (document reference 6.2.1);
- Figure 1.4 Filed Plan (document reference 6.2.1);
- Figure 2.1 Indicative Site Layout (document reference 6.2.2);
- Figure 2.2a Cumulative Sites - Shortlisted (Regional Context) (documentreference 6.2.2);
- Figure 2.2b Cumulative Sites - Shortlisted (Local Context) (document reference 6.2.2);
- Figure 2.3 Proposed Development (document reference 6.2.2);
- Figure 3.5 Indicative Cable Route (document reference 6.2.3);
- Figure 3.6 Environmental Designation Plan (document reference 6.2.3);

- Figure 4.3 Indicative Phasing Plan (document reference 6.2.4);
- Figure 6.1a Site Location Plan – Energy Park (document reference 6.2.6);
- Figure 6.1b Site Location Plan – Off-site Cable Route Corridor & NationalGrid Bicker Fen Substation Extension Works (document reference 6.2.6);
- Figure 6.2a and 6.2b Landscape Strategy Plan (document reference 6.2.6);
- Figure 6.3 Landscape Character Plan (document reference 6.2.6);
- Figure 6.4 Visual Receptors Plan (document reference 6.2.6);
- Figure 6.5a Screened Zone of Theoretical Visibility - Solar Areas and Proposed Viewpoint Locations Plan (document reference 6.2.6);
- Figure 6.5b Screened Zone of Theoretical Visibility - Substation Equipment with EES and Proposed Viewpoint Locations Plan (document reference 6.2.6);
- Figure 6.5c Screened Zone of Theoretical Visibility - National Grid Bicker FenSubstation Extension Works and Proposed Viewpoint Locations Plan (document reference 6.2.6);
- Figure 6.6 Context Baseline Views and Photoviews (document reference 6.2.6);
- Figure 6.7 Photomontages (document reference 6.2.6);

The Landscape and Visual chapter was read, and is assessed, in conjunction with the following documents;

- Appendix 6.7 Scoping out Landscape Character receptors (document reference 183)
- Appendix 6.9 Design and Access Statement (document reference 185)
- Appendix 7.8 Outline Construction Environmental Management Plan (oCEMP) (document reference 239);
- Appendix 7.7 Outline Operational Environmental Management Plan (oOEMP) (document reference 239);
- Appendix 7.9 Outline Decommissioning & Restoration Plan (document reference 240);
- **Figure 1.1** Order Limits (document reference 6.2.1);
- **Figure 1.4** Filed Plan (document reference 6.2.1);
- **Figure 2.1** Indicative Site Layout (document reference 6.2.2);
- **Figure 2.2a** Cumulative Sites - Shortlisted (Regional Context) (document reference 6.2.2);
- **Figure 2.2b** Cumulative Sites - Shortlisted (Local Context) (document reference 6.2.2);
- **Figure 2.3** Proposed Development (document reference 6.2.2);
- **Figure 3.5** Indicative Cable Route (document reference 6.2.3);
- **Figure 3.6** Environmental Designation Plan (document reference 6.2.3);

- **Figure 4.3** Indicative Phasing Plan (document reference 6.2.4);
- **Figure 6.1a** Site Location Plan – Energy Park (document reference 6.2.6);
- **Figure 6.1b** Site Location Plan – Off-site Cable Route Corridor & NationalGrid Bicker Fen Substation Extension Works (document reference 6.2.6);
- **Figure 6.2a and 6.2b** Landscape Strategy Plan (document reference 6.2.6);
- **Figure 6.3** Landscape Character Plan (document reference 6.2.6);
- **Figure 6.4** Visual Receptors Plan (document reference 6.2.6);
- **Figure 6.5a** Screened Zone of Theoretical Visibility - Solar Areas and Proposed Viewpoint Locations Plan (document reference 6.2.6);
- **Figure 6.5b** Screened Zone of Theoretical Visibility - Substation Equipment with EES and Proposed Viewpoint Locations Plan (document reference 6.2.6);
- **Figure 6.5c** Screened Zone of Theoretical Visibility - National Grid Bicker Fen Substation Extension Works and Proposed Viewpoint Locations Plan (document reference 6.2.6);
- **Figure 6.6** Context Baseline Views and Photoviews (document reference 6.2.6);
- **Figure 6.7** Photomontages (document reference 6.2.6);
- **Appendix 6.1** LVIA Methodology (document reference 6.3.6.1);
- **Appendix 6.2** Omitted Viewpoints A1 and A3 at Great Hale Fen (documentreference 6.3.6.2);
- **Appendix 6.3** Arboricultural Survey, Impact Assessment and Protection Plan(document reference 6.3.6.3);
- **Appendix 6.4** Extract from National Character Area 46 The Fens (documentreference 6.3.6.4);
- **Appendix 6.5** Extract from the North Kesteven Landscape CharacterAssessment (document reference 6.3.6.5);
- **Appendix 6.6** Extract from the Landscape Character Assessment of Boston(document reference 6.3.6.6);
- **Appendix 6.7** Scoping Out – Landscape Character Receptors (documentreference 6.3.6.7);
- **Appendix 6.8** Scoping Out - Visual Assessment (document reference6.3.6.8);
- **Appendix 6.9** Detailed Visual Assessment (document reference 6.3.6.9);
- **Appendix 6.10** Summary of Section 42 Consultation Responses since PEIR(document reference 6.3.6.10).

  Appendix 6.11 Legislative and Policy Framework (document reference6.3.6.11).

Previous Consultation

1.7 As part of the DCO process as stipulated by *The Planning Act 2008 (PA2008)*, AAH have carried out pre-application landscape and visual consultation with the developer and relevant members of their design team, on behalf of LCC, over approximately a 12-month period. This has included discussion and consultation on:

- Expectations of the LVIA, including content and reflection of current best practice and guidance
- LVIA Methodology;
- ZTV parameters;
- Study Area extents (distance);
- Viewpoint quantity and locations;
- Accurate Visual Representations (AVRs), including the quantity and location, as well as type and Level.
- Mitigation Measures/Landscape Scheme/Site Layout;
- Cumulative landscape and visual effects, including identification of sites/projects; and
- Residential Visual Amenity Assessment (RVAA) if there are residential properties with receptors likely to experience significant effects to their visual amenity.

1.8 AAH have subsequently issued four Technical Memos summarising comments and consultation through the Pre-application period, the details of which are summarised;

- TM01 Viewpoint comments (May 2022)
- TM02 Viewpoint comments (May 2022)
- TM03 Preliminary Environmental Information Report (PEIR) Comments (August 2022)
- TM04 Relevant Representation (RR) Comments (June 2023)

The AAH Technical Memos are included within **Appendix A**.

1.9 The consultation is summarised within the LVIA from section 6.3.5 detailing consultation with both Lincolnshire County Council and North Kesteven District Council relating to viewpoint selection. Table 6.1 summarises the consultation with AAH through LCC, this will be considered in detail in sections 2,3 and 4 of this LVIA review.

2.0 Presentation of the LVIA

The following section provides a review of the presentation of the LVIA:

- *Is the LVIA appropriate and in proportion to the scale and nature of the proposed Development;*
- *Are the findings of the assessment clearly set out and readily understood;*
- *Is there clear and comprehensive communication of the assessment, in text, tables and illustrations;*
- *Are the graphics fit for purpose and compliant with other relevant guidance and standards; and*
- *Are landscape and visual effects considered separately;*
- *Are receptors and all likely effects comprehensively identified;*
- *Does the LVIA display clarity and transparency in its reasoning, the basis for its findings and conclusions; and*
- *Is there a clear and concise summation of the effects of the proposals.*

LVIA Chapter

2.1 The LVIA considers in detail the consultation including feedback from the Secretary of State, Lincolnshire County Council (LCC) and North Kesteven District Council recommending that the ES considers the worst-case scenario in regards to panel types, as well as assessing the impact of overhead lines as well as underground where uncertainty remains. The matters raised by LCC included considering the dimensions and potential effects of the energy storage elements of the proposed Development, alongside the impact of the construction compounds. Table 6.1 summarises the consultation regarding the viewpoints and clarifies the stance taken within the LVIA with some viewpoints reviewed to illustrate a lack of inter-visibility and others included as viewpoints 20 to 22.

2.2 The preliminary study area within the scoping report, submitted January 2022 was set at 5km and this was supported by a preliminary Screened Zone of Theoretical Visibility (SZTV), which assumed a maximum panel height of 4.5m. The "SZTV was based on the OS dataset, which included larger areas of woodland and tree planting, but excluded small areas of woodland, tree belts, and hedgerow vegetation". The PEIR, which followed fieldwork assessment refined the SZTV including substation assessment at a maximum of 15m height and continued panel assessment height of 4.5m. the dataset was refined to consider the impact of smaller groups of trees and larger hedgerows.

2.3 The design has evolved following the PIER submission, and subsequent consultation, this includes decisions regarding the design and orientation of the arrays as well as adopting a single centralised substation.

2.4 The LVIA introduction confirms compliance with GLVIA3, and reiterates that the purpose is to identify and assess the significance of and the effects of change resulting from the

Development on both landscape as an environmental resource and on people's view and visual amenity. Paragraph 6.2.8 identifies the elements of the project resulting in adverse landscape and visual effects including the short-term construction activity, the fixed mounted panels set at 3.5m and the inverter/ transformer stations located within the panels. Other elements such as the fencing, the gates and the sub-stations are considered in detail in this section also.

2.5 Section 6.3 details the assessment approach in determining both direct and indirect impacts on visual amenity during the three phases of the proposed project: construction, operation, and decommissioning. Assessment is determined by a combination of desk-based and fieldwork appraisal alongside reviews of feedback both from the scoping review and the PIER stage submission. Best-practice methodology has been followed in this aspect by considering all of the stages of the project.

2.6 The LVIA considers in detail the feedback received following the intermediate submissions and reiterates how the design, and particularly viewpoint selection has developed following these responses. Table 6.1 summarises the consultation and clearly justifies the decision making in response to the feedback including the selection or omission of particular viewpoints. This helps with the transparency of decision making and assists in the fieldwork review process.

2.7 The desk-based assessment, supported by the fieldwork, concluded with an assertion that 3.5km represented the maximum extent of visibility and that any visual effect beyond 1.5km would not be significant. This is a plausible summation, but the scale of the Development will be a notable insertion into the wider landscape and considering the topography some long-distance views are evident throughout the study area.

LVIA Appendices

2.8 The Appendices produced as part of the LVIA provide very detailed supporting information relating to the assessment.

LVIA Figures

2.9 The Figures produced as part of the LVIA are appropriate both in level of detail provided and clarity of information presented.

3.0 Methodology and Scope

The following section provides a review of the LVIA Methodology:

- *Has the LVIA been prepared by 'competent experts';*
- *Is the methodology in accordance with relevant guidance and meet the requirements of the relevant Regulations;*
- *Does the methodology and scope of the LVIA meet the requirements agreed in discussions at the pre-application stage during scoping and consultation;*
- *Has the methodology been followed in the assessment consistently;*

- *Are the levels of effect clearly defined and have thresholds and approach to judging significance been clearly defined;*

- *Is detail about various development stages provided and appropriately assessed;*

- *Have cumulative landscape and visual effects been addressed.*

Methodology

3.1 The Methodology to the LVIA is presented in Appendix 6.1; 6.3.6.1. Beginning by reiterating the compliance with GVLIA3 guidance in assessing landscape elements, character, and visual amenity as related but different components. Reference is made to industry best-practice guides including IEMA, Natural England and LI technical guidance notes.

3.2 The series of tables and text define the method of assessment by explaining value, susceptibility, sensitivity, and magnitude of change, to determine the overall degree of landscape and visual effects. Cross-reference is made to GLVIA3 in aspects such as defining sensitivity to reinforce the contents of the tables. The determination of magnitude of change is presented clearly as a process of professional judgement.

3.3 The effects on landscape character is introduced in section 3 of the methodology highlighting the criteria for determining sensitivity and magnitude to clearly identifying the change resultant from the development. A series of tables highlight the criteria for assessment by explaining how magnitude of change is assessed alongside the determination of value and assessment of susceptibility. These are used to assess visual susceptibility as shown in Table 9.

3.4 Visual amenity is considered in section 4, and commences by reiterating the GLVIA3 definition, using this to inform the reader that the LVIA considers the changes to views arising from the proposals in relation to visual receptors including settlements, residential properties, transport routes, recreational facilities, and attractions. The assessment of these is reinforced by the prudent selection of representative viewpoints.

3.5 Section 5 of the methodology details the process of the assessment of cumulative effects. This is defined as “the study areas for two or more solar farms or other infrastructure, considered relevant to the assessment, overlap so that the cumulative schemes are experienced at proximity where they may have a greater incremental effect.” Paragraph 5.3 extensively defines the cumulative magnitude of change as an expression of the degree to which landscape character receptors and views will be changed by the addition of the proposed solar Development to the identified solar schemes and other infrastructure, that are already existing, consented or proposed. The different variables contributing to this assessment of change is defined within the paragraph and reinforced by paragraph 5.5 which defines the different ways a viewer can perceive the Development and the degree of change, these include simultaneous or in combination, in succession, in sequence or perceived, each of these are defined to assist understanding of how the assessment and application of professional judgement has been undertaken.

3.6 The final section of the methodology determines the significance of landscape and visual effects, again using tables and text to introduce significant, which is defined as ‘having a definitive effect on the view’ and not significant which is considered as ‘not definitive, and the effect continues to be defined principally by its baseline condition.’ Table 12 determines

that a significant change is set within the threshold of major effect, however best-practice determines that both moderate and major impacts are considered as significant, so there is divergence of opinion on this matter.

3.7 The body of the LVIA repeats many of the points detailed within the methodology document and uses a section of the tables to highlight the criteria used to apply professional judgement to determine the effect.

3.8 A section commencing with paragraph 6.3.52 explains the graphic techniques used across the LVIA, including the process of establishing the effects of the Development through the production of SZTV plans.

4.0 Appraisal of Landscape Baseline and Effects

The following section provides a review of the Landscape Baseline and Effects:

- *Has the methodology been followed in the landscape assessment;*
- *Are all landscape receptors and all likely effects comprehensively identified and assessed;*
- *Has the value and susceptibility of landscape resources been appropriately addressed and at appropriate scales (e.g., site, local, regional, and national);*
- *Is there a clear and concise summation of the visual effects of the proposals; and*
- *Are potential cross-over topics, such as heritage or ecology, addressed.*

Landscape Baseline

4.1 The Landscape Baseline is considered in section 6.4 of the LVIA, the section begins by describing the character of the local landscape in relation to published Landscape Character Assessments, particularly in regards to identified receptors. The assessments referenced range from a national context provided by Natural England through to local assessments undertaken by North Kesteven Council for the Energy Park and the Cable Route Corridor, and Boston Borough Council for the Off-site cable route corridor. The landscape Character plan is referenced and listed as Figure 6.3.

4.2 The Site is located within National Character Area 46: The Fens, and the key features of this are described in paragraph 6.4.6. Paragraph 6.4.10 describes the key characteristics of the Fens Regional Character Area, within which the Energy Park falls. Within a finer grain context, the Fenland Landscape Character sub-area occupies the majority of the 5km study area. The off-site cable route corridor and substation site at Bicker Fen fall within the Landscape type A: Reclaimed Fen, which is distilled down to a Landscape Character Area A1: Holland Reclaimed Fen. All of the Character areas are described in detail within the chapter.

4.3 Paragraph 6.4.18 references Appendix 6.3- Arboricultural Survey, Impact Assessment and Protection Plan (document reference 6.3, 6.3) this describes some of the features of the area including woodland blocks, farm buildings, lines of trees and hedgerows.

4.4 The surrounding landscape is described in paragraph 6.4.21, the order limits landscape is described as typical of the managed fenland agricultural landscape. It is an area that fits within the wider context and does not contain any distinguishing features of note. There are no statutory landscape designations either within the order limits or the wider context. Table 6.4 draws a useful assessment of the landscape values, with an appraisal of the differing assets.

4.5 Susceptibility is considered from paragraph 6.4.25, the Site, containing a number of large fields; described as a large-scale landscape dominated by big skies. It is said that this is typical of NCA 46, which is noted for “large-scale, flat, open landscape with extensive vistas to level horizons. The level, open topography shapes the impression of huge skies which convey a strong sense of place, tranquillity, and inspiration.” The section considers in detail the degree of susceptibility in relation to the open character, the flat topography as well as the lack of prominent landmarks, before reaching a conclusion that the landscape appears settled, quiet and remote in places.

5.0 Appraisal of Visual Baseline and Effects

The following section provides a review of the Visual Baseline and Effects:

- *Has the methodology been followed in the visual assessment;*
- *Are all visual receptors and all likely effects comprehensively identified and assessed;*
- *Has the value and susceptibility of visual resources been appropriately addressed;*
- *Is there a clear and concise summation of the visual effects of the proposals;*
- *Are the viewpoints that have been used appropriate and meet the number, location and requirements agreed in discussions at the pre-application stage during scoping and consultation; and*
- *Are the Visualisations/Photomontages that have been used appropriate and meet the number, location and requirements agreed in discussions at the pre-application stage during scoping and consultation.*

Visual receptors

5.1 Desk-based assessment was initially undertaken to generate SZTV plans, which were presented in the PEIR stage of assessment. Two site visits were undertaken during late Spring 2022. All of the research, which is in line with best-practice, determined that the views from within the Site are of medium to long-range. Paragraphs 6.4.43 to 6.4.49 describes the characteristics of the Site and surrounding area and offers an accurate summation. The assessment process determined that a study area of 1.5km radii should be used, with the caveat that some of the selected viewpoints should be beyond that limit. This is an acceptable approach to use viewpoints beyond the focus area to determine the actual effect of the Development on the medium and long-range views.

Landscape Assessment

5.2 The Landscape Assessment focuses on the appraisal of impact from selected viewpoints which the LVIA reiterates were not selected to cover every possible view of the Development, but rather are a representation of the range of receptor types. The different receptor types are shown to include residents, users of PRoW and road users. The final selection of the viewpoints was revised following advice from LCC.

5.3 Table 6.5 identifies the 23 selected viewpoints and provides a useful summation as to the rationale of selection. It is useful to identify why 11 of the shortlisted viewpoints were not selected for further assessment, this rationale is further detailed in Appendix 8.8 (ref 6.3.6.8).

5.4 The effect on different receptor types are considered from paragraph 6.4.57, and dividing the appraisal into succinct paragraphs is a useful approach and enables effective on-site assessment of the findings of the LVIA. The overall assessment of PRoW is summarised further from paragraph 6.4.69, the following paragraph then describes in detail the paths omitted from further assessment. Again, the approach here enables effective cross assessment of the LVIA findings.

Visualisations/Photomontages

5.5 The representative viewpoints are covered in figures 6.7 and 7.3, and omitted viewpoints are identified within Appendix 6.2. The images are clear and follow best-practice, with relevant information presented to support the view. The assessment was undertaken during April 2022 and December 2022 and the viewpoints cover the study area effectively and are selected carefully to assess the effect on different receptors. The clear identification of the omitted viewpoints is useful to cross-reference the approach and findings through site assessment.

Assessment of effects

5.6 Section 6.5 considers the likely significant effects, commencing with the construction effects, the type of impacts is detailed, and this is then broken-down to consider the effects into distinct categories including elements within the order limits, topography, groundcover, trees and hedgerows, PRoW, water features and drainage. It is useful to have these different receptors identified in detail and makes the appraisal process easier to conduct.

5.7 The section then moves on to consider the effect on Landscape Character, progressing from national character area to local finer grain landscape types.

5.8 Table 6.6 is a summation of the predicted effects on the viewpoints during the construction phase. Settlements and transport routes are then assessed. It is useful to consider the transport routes as the network in the study area is likely under significant pressure from the volume of traffic as well as the scale of the vehicles, so it is important to appraise these in detail.

5.9 The considered effects of construction on the study area's PRoW is considered within table 6.7, where each is assessed alongside a useful summation of the reasoning behind the assessment.

5.10 The process is then repeated in the same level of detail for the operation phase and then decommissioning. Overall, the assessment of effects is clear, concise and covers all of the aspects with clarity.

5.11 Table 6.10 provides a summary of the effects of the receptors during construction and operation, it includes the impact of mitigation. It is noted that within this table moderate is not considered to be significant, this would need to be consistent approach across the whole ES and not just the LVIA chapter.

6.0 Appraisal of Cumulative Landscape and Visual Effects and Residential Visual Amenity Assessment

The following section provides a review of the cumulative effects and Residential Visual Amenity Assessment (RVAA):

- *Have cumulative landscape and visual effects been addressed;*
- *Are the RVAA and cumulative effects methodologies in accordance with relevant guidance and meet the requirements of the relevant Regulations;*
- *Does the methodology and scope of the assessment of cumulative effects and RVAA meet the requirements agreed in discussions at the pre-application stage during scoping and consultation;*
- *Has the methodology been followed consistently;*
- *Are residential and cumulative receptors and all likely effects comprehensively identified; and*
- *Are any residential properties (receptors) likely to experience significant effects to their visual amenity.*

Appraisal of Cumulative Landscape and Visual Effects

6.1 Cumulative schemes are considered in section 6.7 of the LVIA, the section commences by referencing GLVIA3 and Planning Inspectorate Advice Note Seventeen (2019) in regards defining potential cumulative landscape and visual effects of the proposed Development. With reference to Chapter 2, It is considered that there are no inter-project effects. Appendix 2.3 identifies a long and shortlist of cumulative sites.

6.2 Paragraph 6.7.11 identifies a number of Developments which have been excluded from the LVIA, all of which fall outside of the 3km study area. Whilst it is likely they the distance reduces intervisibility it is important to understand that given the potential for long-range views across the relatively open landscape that the 3km distance is not the only defining reason for omission. This section of the LVIA does not make it clear if fieldwork has been used to reinforce the theoretical assumption that distance renders intervisibility as negligible, therefore resulting in omission.

6.3 Paragraph 6.7.14 introduces the three solar energy schemes, including one awaiting determination, located within the study area, each of the two operational schemes are considered in detail in the following paragraphs.

7.0 Mitigation and Design

The following section provides a review of the Mitigation and Design:

- *Is there evidence of an iterative assessment-design process and it is clear that this has informed the site redline, layout and primary and secondary mitigation;*
- *How appropriate is the proposed mitigation;*

- *Are potential cross-over topics, such as heritage or ecology, addressed and incorporated within the mitigation; and*

- *Is the long-term management of existing and proposed vegetation properly addressed in any long-term management plans to promote establishment.*

Evidence of Iterative Process

7.1 Mitigation proposals are considered in section 6.6 of the LVIA. During design development following the PEIR submission the height of the arrays has been reduced from 4.5m to 3.5m. Similarly, there have been refinements to the layout to enhance separation from residential properties and the public highways. This process of design-led mitigation is welcomed.

Mitigation Measures

7.2 Other mitigation measures are detailed within paragraph 6.6.5 and include protecting existing trees and providing offsets from watercourses and vegetation. Individual properties have had the offset increased, and the proposed 12v substation has been omitted from the design of the Energy Park. The change to a single centralised onsite substation alongside the energy storage system increases separation distances from East Heckington.

7.3 The design has evolved and appears to have responded to the consultation process, there is clear evolution from the PEIR presentation. The mitigation has responded to the recommendations of the local landscape character area reports.

7.4 In addition to the LVIA the mitigation section is supported by the outline Construction Environmental Management Plan (oCEMP) (doc ref 7.7), the outline Landscape and Ecological Management Plan (oLEMP) (doc ref 7.8), and the outline Decommissioning and Restoration Plan (oDRP) (doc ref 7.9).

7.5 Paragraph 6.6.9 onwards details aspects of mitigation considered as enhancements including areas which will be utilised for habitat enhancement, and it is acknowledged that the modest interventions which include offsets will increase separation distances. Whilst this is commendable, the advantages of these would come from a significant scale and not merely a token effort. Given the size of the scheme it would be useful if the idea of 'modest' enhancement could be scaled up somewhat. One element considered in this section is the creation of a community orchard, but whilst this appears a good idea, it is a sparsely populated area so is there a community present close enough to manage it and benefit fully?

8.0 Conclusions and Recommendations

The following section provides an overall summary and conclusion on the suitability of the Landscape and Visual elements of the DCO Application. This includes the adequacy of the LVIA, reviewed in accordance with the Landscape Institute *Technical Guidance Note 1/20 (10 Jan 2020): Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs)* and whether it is sufficient to support making an informed decision.

Also, the Landscape and Visual elements of the supporting information (as listed in **Section 1.6** of this report) has been reviewed and comments made where relevant.

Finally, recommendations for further information to be sought are provided to assist in the Examination of the DCO Application.

Summary and Conclusions on the LVIA

6.1 The LVIA and the associated figures, appendices and documents provides a thorough analysis of the Development. The collective assessment is thorough, easy to navigate and complies with best practice methodology. The viewpoints and photomontages cover the study area effectively and the figures are clear and well-presented. The document has shown the rational for both selection of viewpoints and the omission for others and this enables effective on-site examination and assessment.

6.2 The 3km study area is appropriate but since the open nature of the landscape provides the possibility for long-range views there is the possibility that receptors beyond the study area will experience the Development within the landscape. It is noted that over the application period the Development design has evolved including reducing the array height from 4.5m to 3.5m along with changes in the sub-station numbers and locations.

6.3 The assessment has considered all phases of the Development in detail and accounted for the impact on the wider road network during construction and decommissioning , during which the volume of traffic and the numbers of vehicles will be unprecedented for the local network.

6.4 Paragraph 6.8.8 commences the summation of the likely effects of the Development. The assessment considers the effects during the different phases of the Development, and the construction is considered to result in short-term significant adverse effects, with this reverting to minor-adverse (and therefore not significant) during the operation phase outside of a distance of 500m from the Energy Park. This is likely to be the case generally but given the open nature of the landscape affording long-distance views this does appear to be too generalised a determination.

6.5 Table 6.10 provides a useful collective table to review the different receptors. The assessment is thorough and logical, although the conclusion that only Major or Moderate-Major are to be considered as significant is not a standard conclusion. In line with the Landscape Institute guidance we consider all effects moderate and above to be significant, so therefore dispute some of the conclusions regarding impacts. However, the process of assessment is thorough and well-explained in the volumes.

6.6 The 3km study area selection was explained in detail and whilst it is likely that most effects do arise within that circumference, the impacts beyond the 3km boundary, however intermittent, cannot be ignored.

6.7 Overall, the chapter, appendices and figures provide a clear process of assessment, with sufficient detail, that is not repetitive or onerous, and the process of reviewing is easier as a result of the clarity of information provided.

AAH consultants

Technical Memorandum 1 (AAH TM01)

Lincolnshire County Council, Heckington Fen Solar Project

Visual Amenity: Viewpoint Comments

A meeting was held on Monday 11th April 2022 over Microsoft Teams between landscape architects from AAH and Pegasus (Radek Chanas) to go over the general site visibility, viewpoints and potential receptors. We have reviewed the information presented to date and provided by Pegasus, including the Heckington Scoping Report, and subsequently attended site over the week commencing 11th April 2022. We walked the Heckington Fen Solar site and surrounding area and visited all the viewpoints currently proposed by Pegasus. The proposed viewpoints were identified on the draft drawing: *P20-2370_12 Rev A* (23/03/2022) that was that was issued via email from Pegasus. However, following the discussion on 11th April 2022, it was highlighted by Pegasus that through further fieldwork and consultation the viewpoints would be refined further, so the viewpoints proposed have been treated as draft at this stage. Therefore AAH have proposed to provide further comments when a more definitive list of viewpoints has been developed by Pegasus. We will subsequently re-visit site and review each viewpoint and provide further detailed comments.

Therefore, we have the following general comments and requests:

1. Comments provided are based on the information provided to AAH and subsequent AAH fieldwork carried out to date. Therefore any comments are based on the layouts currently provided, which are confirmed as illustrative and undergoing development. This is to be expected as part of an iterative process. While we understand that the information provided to date is not intended to undergo wholesale changes, the layout is undergoing design development and subject to the final layouts presented, additional viewpoints or information may be requested. This is particularly pertinent for taller/larger elements such as sub stations or battery storage which due to their mass will likely be more conspicuous in the landscape.

2. Could an updated ZTV be issued to LCC/AAH when available with any additional proposed viewpoints illustrated. This would be a particularly useful set of information if this included the selected viewpoints, PROW and Roads marked on also. It should also be clear as to the height, extent and location of any proposals that the ZTV has been generated upon. Once these viewpoints have been located, AAH will be able to review on site;

3. When available/agreed, please could further details be provided about the final PV Array extents and final selection from the two options indicated on Images "4", on pg.13 (*Image Of A Bifacial Solar Panel System*; and *Image Of A Tracker Solar Panel System*), and within paras. 3.4 to 3.7 of the Scoping Report. The final dimensions should also be clarified at this point and ZTV updated accordingly;

4. When available/agreed, please could further details be provided about the final Inverter locations and selection from the two options indicated within paras. 3.8 to 3.11 of the Scoping Report. The final dimensions should also be clarified at this point and ZTV updated accordingly (and if appropriate);

5. When available/agreed, please could further details be provided about the final Transformer location and dimensions indicated within paras. 3.12 and 3.13 of the Scoping Report. The final dimensions should also be clarified at this point and ZTV updated accordingly (and if appropriate);

6. At this stage, it is assumed all cabling will be underground, however the Scoping Report indicated within para. 3.15 that onsite cabling may require some above ground cabling. Please provide details and extents of any overhead cabling onsite when available. We would recommend, from a visual perspective, that overhead cabling is avoided where possible;

7. The locations of ancillary elements, such as fencing, Battery Storage, Inverters, Transformers and Switchgears will be important in reducing visual impacts as these could appear more conspicuous than uniform PV arrays – their location should be carefully considered in relation to visual receptors, but also relating to the PV Arrays. The final size and location of all these ancillary elements should be provided and indicated on the layouts when available to enable their impact to be understood;

8. Please could further details be provided about any on-site substation and control buildings (paragraph 3.26 to 3.27 of the scoping report), including location, size/massing and height, including what features would be 15 metres in height. As at this stage we do not have this information, the location of this would likely have visual impacts that would require additional viewpoints beyond those initially identified;

9. We do not feel we can provide more detailed feedback or suggested viewpoint locations at this stage on the Offsite Cabling Corridors until further information is provided. However, at this point one option/route does not appear to be preferable to the others, and would expect the LVIA to provide a clear evaluation and likely impacts of any route;

10. Please could further details be provided about the connection to the National Grid at Bicker Fen and the extent of any development associated with this (paragraph 3.28 and 3.29 of the scoping report), including location, size/massing and height, including what features would be 15 metres in height. As at this stage we do not have this information, the location of this would likely have visual impacts that would require additional viewpoints beyond those initially identified;

11. Please could further details be provided about the implications on existing vegetation to facilitate construction access along the A17 (paragraph 4.1 of the scoping report), both on site and along the access route to the site. As at this stage we do not have this information, the implication of this enabling work may have visual impacts that would require additional viewpoints beyond those initially identified;

12. While viewpoints from the railway line are not likely to be able to be safely obtained, potential views from receptors traveling on trains should be considered within the assessment; and

13. In regards to heritage assets (Listed Building and Scheduled Monuments), we would like to see the intervisibility with each of the key designated heritage assets (or groups of assets) identified within the study area be considered and where appropriate evaluated as part of the assessment, and the steps to mitigate the impact need to be set out.

The following comments are in regards to visibility of the site from general groups of receptors and viewpoints, and the plan attached to this memo should be referred to for these target notes, which we would suggest are discussed at a further workshop prior to finalising. This is not an exhaustive list of potential viewpoints and in response to the viewpoints already proposed on the Pegasus drawing: *P20-2370_12 Rev A* (23/03/2022). Once a more detailed viewpoint list is produced we will review and provide further comments. All viewpoint photography should provide the most advantageous views of the site and proposed development:

A. **Potential additional viewpoint included from B1395 Clay Lane at edge of settlement of South Kyme.** While a long distance view (3km+), the landscape is very open from this aspect, and there are potential views south and south east to the site, which may include taller elements of the development;

B. **Potential additional viewpoints included from along B1395 Clay Lane, south of Pattingden House.** While providing medium and long distance views the landscape is very open from this aspect, and there are potential views from users of this road travelling south looking tio the south and south east to the site, which may include taller elements of the development;

C. **Potential additional viewpoints included from the access track to Mill Green Farm**. This would provide a close view from the north, however while the flood defences may screen the PV arrays, they may still be visible above the flood embankments.

D. **Potential additional viewpoints included from along the PROW SKym/2/1.** This would provide views o the site from the west, however while the flood defences may screen the PV arrays, they may still be visible above the flood embankments;

E. **Potential additional viewpoint included from along the PROW Heck/13/1 at section on top of flood defence embankments.** This elevated position, while long distance, may provide views east to the site from the west;

F. **Potential additional viewpoint included from along the PROW Heck/2/4 looking east.** It is unclear as to whether vegetation would screen the site from views from along this PROW;

G. **Potential additional viewpoint included from along Littleworth Drove at bridge over A17 at Heckington.** While a long distance view (4km) it is unclear as to whether vegetation would screen the site from views from this elevated position;

H. **Potential additional viewpoints included from along PROW Heck/15/1.** These constitute close range views of the site from sensitive receptors;

I. **Potential additional viewpoint included from junction of PROW Ambe/4/1 and Claydike Bank.** Represents views from the east looking west to the site, however it is unclear as to whether vegetation would screen the site from views from along this PROW;

J. **Potential additional viewpoint included from junction of PROW Ambe/3/1 south of Old Amber Hill.** Represents views from the east looking west to the site, however it is unclear as to whether vegetation would screen the site from views from along this PROW;

K. **Potential additional viewpoints included from Maryland Bank, south of Chestnut House Farm, looking south.** While a long distance view (2km), represents views from the north across an open landscape with limited vegetation cover.; and

L. **Potential additional viewpoints included from Browns Drove looking north west.** Represents views north west from this lane and residential properties along it.

As stated, at this stage we do not have details on the location and appearance/extent of taller/larger elements that for part of the development which would likely have visual impacts that would require additional viewpoints beyond those initially identified.

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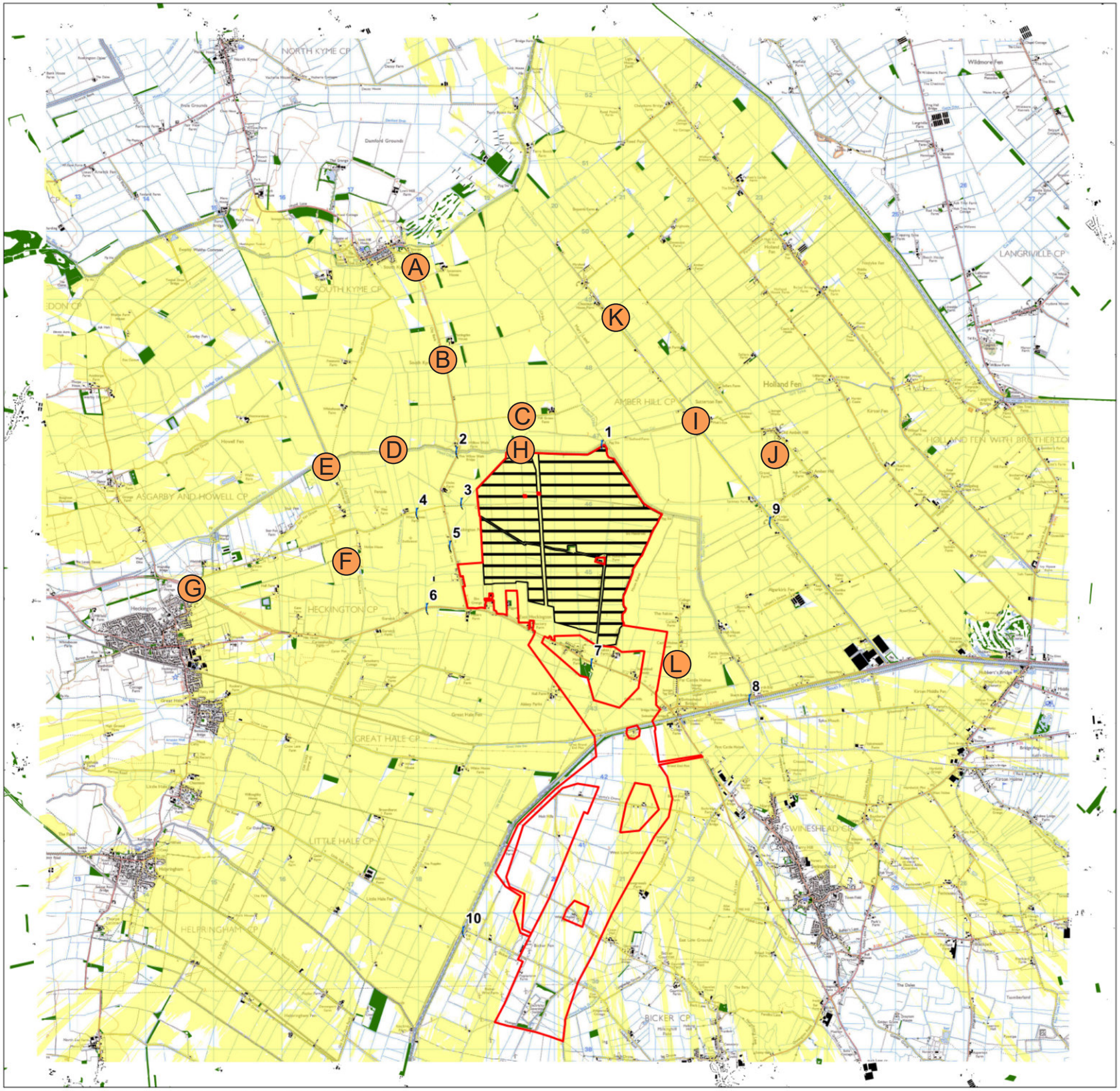
05 May 2022



KEY

- Site Boundary
- Proposed Area of Development
- Proposed Viewpoint Location
- OS Open Map Local Buildings
- OS Open Map Local Woodland
- ZTV - 4.5m High Development Visible

Screened ZTV Production Information -
- DTM data used in calculations is OS Terrain 5 that has been combined with OS Open Map Local data for woodland and buildings to create a Digital Surface Model (DSM).

- Indicative woodland and building heights are modelled at 15m and 8m respectively.
- Viewer height set at 1.7m (in accordance with para 6.11 of GLVIA Third Edition) - Calculations include earth curvature and light refraction

NB. This Zone of Theoretical Visibility (ZTV) image illustrates the theoretical extent of where the development may be visible from, assuming 100% atmospheric visibility, and includes the screening effect from vegetation and buildings, based on the assumptions stated above.

Revisions:
First Issue 13/12/2021 AD
A - 23/03/2022 CR Revised boundary

Screened Zone of Theoretical Visibility and Proposed Viewpoint Locations

Heckington Fen Solar

AAH MARK UP

REFER TO AAH TM01

May 2022

A

DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

0 3.25 km

N

AAH consultants

Technical Memorandum 2 (AAH TM02)

Lincolnshire County Council, Heckington Fen Solar Project

Visual Amenity: Viewpoint Comments

A meeting was held on Monday 11th April 2022 over Microsoft Teams between landscape architects from AAH (Oliver Brown) and Pegasus (Radek Chanas) to go over the general site visibility, viewpoints and potential receptors. We have reviewed the information presented and provided by Pegasus, including the Heckington Scoping Report, and subsequently attended site over the week commencing 11th April 2022 to carry out an initial visual survey. However, following the discussion on 11th April 2022, it was highlighted by Pegasus that through further fieldwork and consultation the viewpoints would be refined further, therefore initial comments were not issued by AAH until this fieldwork was carried out.

Following this, drawing: *P20-2370_12 Rev B* (13/05/2022) was issued via email from Pegasus which included updated viewpoint locations. Subsequently, AAH re-visited the site week commencing 30th May 2022 and walked the Heckington Fen Solar site and surrounding area and visited all the viewpoints currently proposed on drawing: *P20-2370_12 Rev B.*

Therefore, we have the following general comments and requests:

1. Comments provided are based on the information provided to AAH and subsequent AAH fieldwork carried out to date. Therefore any comments are based on the current layouts, which are confirmed as illustrative and undergoing development. This is to be expected as part of an iterative process. While we understand that the information provided to date is not intended to undergo wholesale changes, the layout is undergoing design development and subject to the final layouts presented, additional viewpoints or information may be requested. This is particularly pertinent for taller/larger elements such as sub stations or battery storage which due to their mass will likely be more conspicuous in the landscape.

2. When available/agreed, please could further details be provided about the final PV Array extents and final selection from the two options indicated on Images "4", on pg.13 (*Image Of A Bifacial Solar Panel System*; and *Image Of A Tracker Solar Panel System*), and within paras. 3.4 to 3.7 of the Scoping Report. The final dimensions should also be clarified at this point and ZTV updated accordingly;

3. When available/agreed, please could further details be provided about the final Inverter locations and selection from the two options indicated within paras. 3.8 to 3.11 of the Scoping Report. The final dimensions should also be clarified at this point and ZTV updated accordingly (and if appropriate);

4. When available/agreed, please could further details be provided about the final Transformer location and dimensions indicated within paras. 3.12 and 3.13 of the Scoping Report. The final dimensions should also be clarified at this point and ZTV updated accordingly (and if appropriate);

5. At this stage, it is assumed all cabling will be underground, however the Scoping Report indicated within para. 3.15 that onsite cabling may require some above ground cabling.

Please provide details and extents of any overhead cabling onsite when available. We would recommend, from a visual perspective, that overhead cabling is avoided where possible;

6. The locations of ancillary elements, such as fencing, Battery Storage, Inverters, Transformers and Switchgears will be important in reducing visual impacts as these could appear more conspicuous than uniform PV arrays – their location should be carefully considered in relation to visual receptors, but also relating to the PV Arrays. The final size and location of all these ancillary elements should be provided and indicated on the layouts when available to enable their impact to be understood;

7. Please could further details be provided about any on-site substation and control buildings (paragraph 3.26 to 3.27 of the scoping report), including location, size/massing and height, including what features would be 15 metres in height. As at this stage we do not have this information, the location of this would likely have visual impacts that would require additional viewpoints beyond those initially identified;

8. We do not feel we can provide more detailed feedback or suggested viewpoint locations at this stage on the Offsite Cabling Corridors until further information is provided. However, at this point one option/route does not appear to be preferable to the others, and would expect the LVIA to provide a clear evaluation and likely impacts of any route;

9. Please could further details be provided about the connection to the National Grid at Bicker Fen and the extent of any development associated with this (paragraph 3.28 and 3.29 of the scoping report), including location, size/massing and height, including what features would be 15 metres in height. As at this stage we do not have this information, the location of this would likely have visual impacts that would require additional viewpoints beyond those initially identified;

10. Please could further details be provided about the implications on existing vegetation to facilitate construction access along the A17 (paragraph 4.1 of the scoping report), both on site and along the access route to the site. As at this stage we do not have this information, the implication of this enabling work may have visual impacts that would require additional viewpoints beyond those initially identified;

11. While viewpoints from the railway line are not likely to be able to be safely obtained, potential views from receptors traveling on trains should be considered within the assessment; and

12. In regards to heritage assets (Listed Building and Scheduled Monuments), we would like to see the intervisibility with each of the key designated heritage assets (or groups of assets) identified within the study area be considered and if/where appropriate evaluated as part of the assessment, and the steps to mitigate the impact need to be set out.

The following comments are in regards to visibility of the site from general groups of receptors and viewpoints, and the plan attached to this memo should be referred to for these target notes. We would suggest these are discussed at a further workshop prior to finalising. Unless otherwise stated, all viewpoint locations proposed on drawing *P20-2370_12 Rev B* are appropriate, and the following should be considered in addition to these. All viewpoint photography should provide the most advantageous views of the site and proposed development:

A. **Potential additional viewpoint(s) included from south west of the site around Little Hale and/or Great Hale looking north east.** While providing long distance views the landscape is open from this aspect, and there are potential views from users in this area. There is currently little viewpoint coverage proposed south west of the site and this would serve to cover this area, even if to illustrate lack of visibility. Potential location for a viewpoint (or viewpoints) include:
    - A1: Access road to the Farm House and The Last House at Great Hale Fen
    - A2: Access road to White House Farm at Great Hale Fen
    - A3: Little Hale Drove at Little Hale Fen.

B. **Potential additional viewpoints included from along B1395 Clay Bank, south of Pattingden House and woodland blocks.** While providing medium and long distance views the landscape is very open from this aspect, and there are potential views from users of this road travelling south looking to the south and south east to the site, which may include taller elements of the development. This would offer a less screened view from the north than proposed VP19;

C. **Potential additional viewpoints included from the access track to Mill Green Farm/PROW SKym/3/1**. This would provide a close/medium range view from the north, however while the flood defences may screen the PV arrays, they may still be visible above the flood embankments.

D. **Potential additional viewpoints included from along the PROW SKym/2/1.** This would provide views of the site from the west (sequential view along with VP 1 and bullet D below), however while the flood defences may screen the PV arrays, they may still be visible above the flood embankments;

E. **Potential additional viewpoint included from along the PROW Heck/13/1 at section on top of flood defence embankments.** This elevated position, while long distance, may provide views east to the site from the west (sequential view along with VP 1 and bullet E above);

F. **Potential additional viewpoints included from along PROW Heck/15/1.** These constitute close range views of the site from sensitive receptors along the PROW to the north;

G. **Potential additional viewpoint included from junction of PROW Ambe/4/1 and Claydike Bank.** Represents views from the east looking west to the site, however it is unclear as to whether vegetation would screen the site from views from along this PROW and may provide similar view to proposed VP 12;

H. **Potential additional viewpoints included from Browns Drove, north of terraced housing, looking north west.** Represents views north west from this lane and residential properties along it.

As stated, at this stage we do not have details on the location and appearance/extent of taller/larger elements that for part of the development which would likely have visual impacts that would require additional viewpoints beyond those initially identified.

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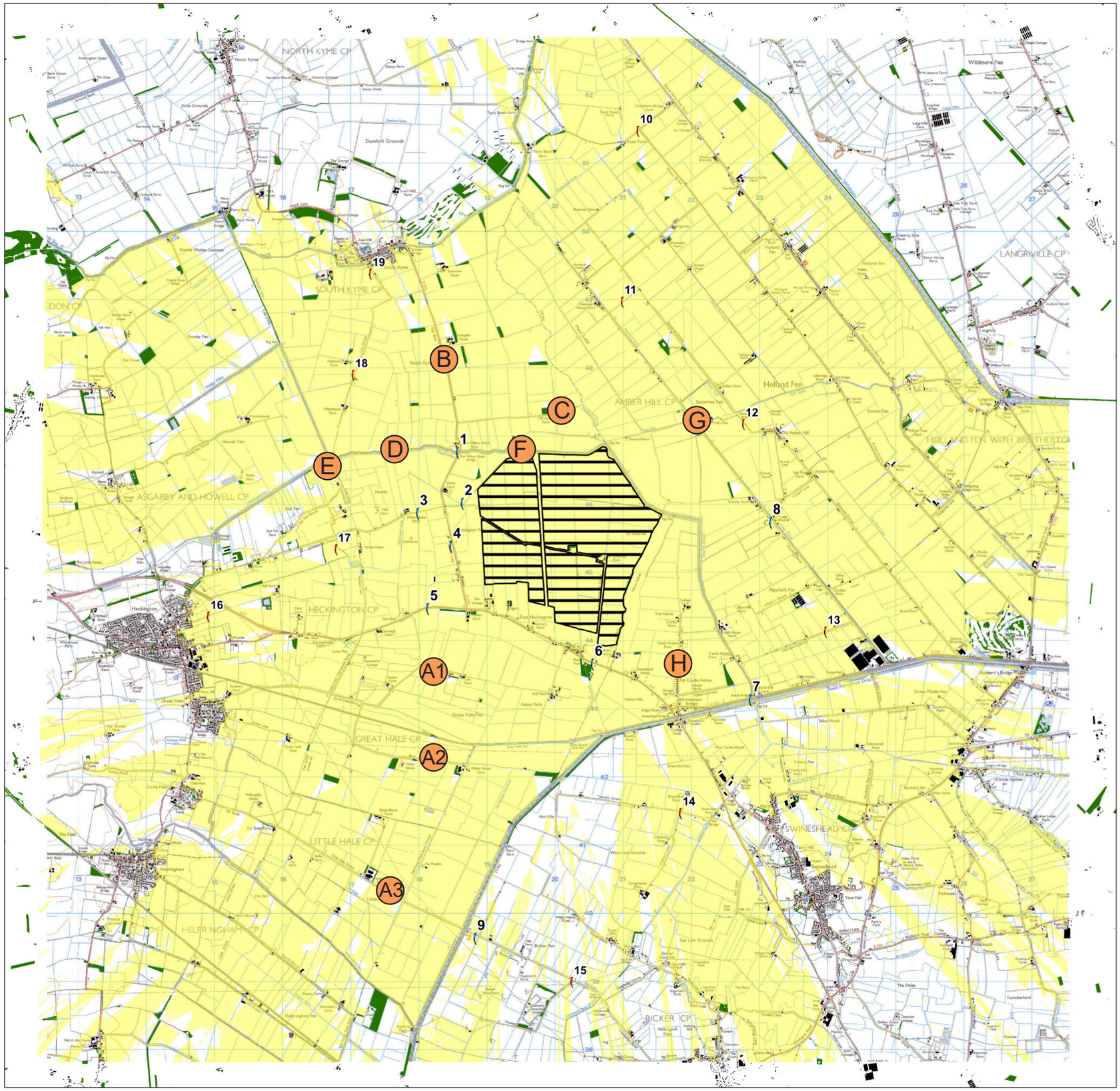
31st May 2022



DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

KEY

- Proposed Area of Development
- Proposed Viewpoint Location (Scoping report stage)
- Additional Viewpoints
- OS Open Map Local Buildings
- OS Open Map Local Woodland
- ZTV - 4.5m High Development Visible

NB. Scoping report VP 1 omitted, remaining VPs subsequently renumbered

Screened ZTV Production Information -
- DTM data used in calculations is OS Terrain 5 that has been combined with OS Open Map Local data for woodland and buildings to create a Digital Surface Model (DSM)

- Indicative woodland and building heights are modelled at 15m and 8m respectively.
- Viewer height set at 1.7m (in accordance with para 6.11 of GLVIA Third Edition)
- Calculations include earth curvature and light refraction

N.B. This Zone of Theoretical Visibility (ZTV) image illustrates the theoretical extent of where the development may be visible from, assuming 100% atmospheric visibility, and includes the screening effect from vegetation and buildings, based on the assumptions stated above.

Revisions:
First Issue- 13/12/2021 AD
A - 23/03/2022 CR Revised boundary B - 13/05/2022 AJH Additional viewpoints

Screened Zone of Theoretical Visibility and Proposed Viewpoint Locations

Heckington Fen Solar

AAH MARK UP

REFER TO AAH TM02

May 2022

B

AAH consultants

Technical Memorandum 3 (AAH TM03):

Lincolnshire County Council, Heckington Fen Solar Project: PEIR Landscape and Visual Comments

Introduction

AAH Consultants have reviewed the Heckington Fen Solar Project: *Land at Six Hundreds Farm, Six Hundred Drove, East Heckington, Sleaford, Lincolnshire. Preliminary Environmental Information Report, June 2022* (PEIR), on behalf of Lincolnshire County Council (LCC), in relation to Landscape and Visual matters. PEIR information downloaded from: https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park-consultation and the documents that have been referenced, are as follows:

- **Preliminary Environmental Information Report. Volume 1: Main Report and Figures:**
  - Chapters 1 to 5 (not formally reviewed, but used to provide context to the site, development layout and proposals that would form the parameters for assessment) including the following figures:
    - Figure 1.1 Site Location Plan
    - Figure 1.2 Administrative Boundaries
    - Figure 1.3 Energy Park Boundary
    - Figure 2.1 Indicative Site Layout
    - Figure 2.2 Cumulative Sites
    - Figure 3.1 Working Indicative Site Layout
    - Figure 3.2 Working Indicative Site Layout (Revision E)
    - Figure 3.3 Site Search Exercise
    - Figure 3.4 Indicative Grid Routes
    - Figure 3.5 Environmental Designations Plan
    - Figure 4.1a Current Assets on Energy Park Site
    - Figure 4.1b Proposed Site Access and internal access
    - Figure 4.1c Proposed Solar PV Development Areas
    - Figure 4.1d Proposed Battery Storage and New Infrastructure
    - Figure 4.1e Proposed Ecological Enhancements for Operational Energy Park
    - Figure 4.1f Proposed Permissive Footpath
    - Figure 4.2 Fixed Solar PV Panel Technology
    - Figure 4.3 Tracker Solar PV Panel Technology
    - Figure 4.4 Indicative Security Fence Design
    - Figure 4.5 Proposed Bicker Fen Extension Design
  - Chapter 6: Landscape and Visual (main focus of AAH review), including the following figures:
    - Figure 6.1 Landscape Character Plan
    - Figure 6.2 Visual Receptors Plan
    - Figure 6.3 Screened Zone of Theoretical Visibility and Proposed Viewpoint Locations for Substation Locations, Energy Storage Areas, and Solar Area (3 separate SZTVs combined into one figure)
    - Figure 6.4 Context Baseline Views
    - Figure 6.5 Cumulative Sites- Regional Context
    - Figure 6.6 Cumulative Sites- Local Context

    - Figure 6.7 Photomontages
  - Chapter 7: Residential Visual Amenity, including the following figures:
    - Figure 7.1 Site Location Plan and Residential Receptors
    - Figure 7.2 Residential Panoramas
  - Chapter 8: Ecology And Ornithology (not formally reviewed, but to provide ecology context to the layout and landscape and visual matters).
  - Chapter 17: Glint And Glare, including the following figures:
    - Figure 17.1 Energy Park and ZTV
    - Figure 17.2 Fixed Panel Array
    - Figure 17.3 Cross Section of Single Axis Tracker
    - Figure 17.4 Receptors of Interest

- **Preliminary Environmental Information Report. Volume 2: Appendices**
  - Appendix 6.1 LVIA Methodology
  - Appendix 7.1 RVAA Methodology

The review takes into account previous AAH comments (Refer to Heckington Fen comments within: *AAH TM01* and *AAH TM02*), as well as meetings held with Pegasus and any subsequent meeting minutes. The comments provided are intended to assist in guiding the next (final) stage of the process, development, and refinement of the content of the LVIA chapter and the overall development proposals. It is not a review of any of the preliminary findings or initial assessments.

PEIR Landscape and Visual Comments

A. Main Overarching Comments on the PEIR:

1. The proposed development is subject to EIA, and a Scoping Report was issued by the developer: *Environmental Impact Assessment Scoping Report Land At Six Hundreds Farm, Six Hundreds Drove, East Heckington, Sleaford, Lincolnshire On Behalf Of Ecotricity (Heck Fen Solar) Limited,* prepared by Pegasus, which contained a section on LVIA. Subsequently, a *Scoping Report Review* was carried out by LCC (1st February 2022) which was appended to the *Scoping Opinion* issued by PINS dated: 17th February 2022. Overall the scope of the LVIA is generally aligned with the scoping report and scoping opinion, as well as other AAH comments (*AAH TM01* and *AAH TM02*) and meetings held with Pegasus.

   However, Paragraph 6.3.15 of the PEIR states that *"Representative and illustrative viewpoints have been agreed with Lincolnshire County Council and North Kesteven District Council through the Scoping Report submitted to the Planning Inspectorate".* This is not correct, and as part of the scoping report it was requested that further consultation be carried out with the relevant councils in regards to the viewpoint locations and visualisations. Subsequently, AAH/LCC issued *AAH TM02*, that provided general comments on the landscape and visual aspects of the scheme as well as comments on proposed viewpoints, which included recommendations for additional views. These have not been incorporated into the PEIR, or shown on Figures 6.3a, 6.3b, and 6.3c at this stage. Therefore we request that further consultation is carried out between Pegasus and AAH/LCC and other relevant consultees, in regards to agreeing the viewpoints and visualisations.

2. As outlined within Chapters 3 and 4 of the PEIR, the development proposals are still being developed and finalised. This includes the type of panel and location and design of taller/larger elements such as substations and battery storage. While it is understood that

some aspects of the scheme are unlikely to be detailed until the tendering stage has been completed, we would expect a reasonable level of design fix for the final ES which would clearly set out the parameters of the development, such as heights and locations of elements that have been used in the assessment, which if there are still some outstanding design and layout elements to be finalised would be based on a "worst case" scenario to ensure any effects are not underplayed. This is particularly important for larger and taller elements such as sub stations or battery storage.

3. As mentioned within paragraph 6.3.15 of the PEIR, it is requested that further landscape and visual consultation is carried out between AAH/LCC and District Authority landscape specialists and the developer team (Pegasus) following the conclusion of this second formal consultation phase. This would likely cover the PEIR comments, *AAH TM02,* as well as development proposals and the mitigation scheme, and location of any larger structures or buildings such as the substations and development at Bicker Fen Substation, extent of vegetation loss for highways works, and also subsequent knock-on effects such as any requirement for additional viewpoints or AVRs.

B. <u>Detailed Comments on Preliminary Environmental Information Report Volume 1: Main Text:</u>

1. In regards to the landscape and visual matters of the Environmental Impact Assessment Methodology chapter (**Chapter 2 of the PEIR**):
   - Comments on the ***Development Parameters And Rochdale Envelope*** (Sections 2.4) are as follows:
     - As stated in previous correspondence (refer to paragraphs 1 to 4 of *AAH TM02*), at this stage, we do not have details on the final location and appearance/extent of taller/larger elements that form part of the development. Section 2.4 of the PEIR explains that the design parameters of the development are provided within chapters 3 and 4, and Paragraph 2.4.3 states:
       "Where flexibility is required, guidance produced by the Planning Inspectorate with regard to the use of the 'Rochdale Envelope' approach has therefore been applied within the EIA to ensure a robust assessment of the likely significant environmental effects of the Scheme. This involves assessing the maximum (and where relevant, minimum) parameters for the elements where flexibility needs to be retained, recognising that the worst-case parameter for one technical assessment may differ from another.".
     - While this is a reasonable approach for the solar arrays, we have concerns in regards to the larger and taller elements, and further comments are provided below on chapter 4 of the PEIR.

2. In regards to the Site Description, Site Selection And Iterative Design Process chapter (**Chapter 3 of the PEIR**):
   - Paragraphs 3.2.5 and 3.2.10 provide a narrative on the process of refining the grid connection corridor from the site to the Bicker Fen National Grid Substation. We would expect this route to confirmed as part of the ES and if there are potential landscape and visual effects, these would be assessed as part of the LVIA.

   - Paragraphs 3.2.11 and 3.2.12 provide a brief overview of the extension to the Bicker Fen National Grid Substation. We would expect this to clarified as part of the ES and if there are potential landscape and visual effects, these would be assessed as part of the LVIA.

- While it is understood the PEIR represents a moment in time, and layouts are evolving, *Figure 2.1 - Indicative Site Layout (Revision H),* has been assumed by AAH to be the most up to date layout. Therefore, it is assumed Figures 3-1 and 3.2 have been included to provide detail on the evolution of the layout based on consultee comments.

3. In regards to the Proposed Development chapter (**Chapter 4 of the PEIR**):
   - Section 4.2 covers the "*Rochdale Envelope*" or worst case approach to the assessment, and paragraph 4.2.1 and Table 4.1 cover flexibility within the DCO and plans. While we understand the need for flexibility to accommodate new and evolving technology, the location of taller and larger elements such as the substations and battery storage with have greater visual effects than PV panels, and as such we would expect the locations of these elements be indicated within the ES to allow for the LVIA to accurately assess and viewpoints and/or visualisations to illustrate.
   - Paragraphs 4.5.1 to 4.5.39 provide detailed information on the components of the development and Tables 4.2 and 4.3 of the PEIR usefully provide details of the design parameters used for the PEIR. However, we have concerns in regards to the larger and taller elements, such as the bunding (up to 6m), Substation and Control Building Parameters as outlined in table 4.3. The final location and layout of these elements will have likely greater visual effects in this flat, open rural landscape than PV panels. We would expect the approximate location and "worst case" extent (footprint) of these elements to be identified for the LVIA to allow for a better understanding of the potential landscape and visual effects, an updated ZTV based upon these parameters and an understanding of the likely requirement for additional viewpoint photographs to capture views of the taller/larger elements which will be much more visible and conspicuous.
   - Paragraphs 4.5.40 to 4.5.42 provide information on offsite cabling, the route of which is still being developed, and confirms that no above ground cabling is proposed off site. However we have concerns in regards to the visual and landscape impacts, as well as potential ecological impacts, where cables cross obstacles, such as watercourses or the train line, which we assume would be carried out by directional drilling to minimise effects, particularly at construction. This should be clearly stated and assessed as part of the assessment and existing landscape and ecological assets in these locations should be protected and surveyed if appropriate to ensure effects are minimised.
   - Paragraphs 4.5.43 to 4.5.45 provide information on the Bicker Fen Substation works. The ES should clearly state the proposed works in this location as they have likely landscape and visual effects, particularly if impacting existing trees, as referenced within paragraph 4.5.45. At this stage, limited viewpoints have been proposed in this location, and once works are understood, we would suggest consultation is carried out with AAH/LCC and the district councils to ascertain any additional viewpoint requirements to assess visual effects.
   - Mitigation proposals are provided in Table 4.3, which identifies Biodiversity Net Gain Area and Community Orchard. While these areas are shown on illustrative layouts, having these included in the design parameters allows for them to be accurately captured as part of the scheme, and parameters plan clearly illustrating these areas would be recommended. Figures 4.1C , 4.1 D and 4.1E appear to be good examples of plans to submit as potential parameter plans to accompany the design parameters tables. This would allow for transparency and clarity of development areas, areas of taller/larger development and mitigation when reviewing the LVIA and allow for an understanding of how the development has been assessed.

- Regarding the community orchard: at this stage it is unclear why this has been included within the scheme or if consultation has been carried out with the community to include this element. While it would undoubtably be a positive addition to the landscape, it is unclear what community would benefit, use or maintain the orchard being in a relatively remote location and likely accessed primarily by car. The adjacent Elm Grange School would undoubtably benefit from this asset, however could an explanation and justification be provided, and are there other assets that may be more appropriate in this location?
- Regarding <u>vegetation loss</u>:
  - The extent of any vegetation loss to facilitate construction access or the permanent site access points from the A17, outlined in Table 4.3, is not identified. While it is assumed that site access will be taken from existing agricultural tracks and field entrances to minimise effects, it is likely these may need vegetation cut back for sight lines and/or widening.
  - Any vegetation loss to facilitate any potential wider highways works (as illustrated on highways figures within Appendix 14.1 of the PEIR) for construction access is not identified. Paragraph 4.7.1, bullet 15 identifies widening of highways access points, which may result in vegetation removal, and bullet 16 identifies vegetation removal at Bicker Fen Substation. This removal is likely to open up views and remove valuable elements of the local landscape.
  - We would expect any vegetation works or loss all to be clearly illustrated and included within any assessment, as this has the potential to remove existing valuable features (that make up the character area) and open up views into or across the site or the wider area. We would expect any proposed vegetation removal to be surveyed to *BS:5837 Trees in Relation to Design, Demolition and Construction to Construction* so it is clear what the arboricultural value is (to aid assessment) and subsequently is appropriately mitigated as part of the proposals.
- Regarding <u>Overhead/ground lines:</u> Could it be clarified the height of any above-ground cabling and associated poles are proposed within the site, as these will likely have additional visual effects and would need to be considered within the LVIA.
- If the plans and sections for the LVIA are still intended to be indicative, the LVIA needs to clearly state what layout, offsets and mitigation the assessment has been based upon, as different mitigation strategies will likely alter potential effects. Also, we would expect the layout to not just deliver green infrastructure to the minimum offsets provided on Figure 4.1 C and seek opportunities for positive contributions to the landscape of the site. We would recommend an Outline Landscape and/or Ecological Management Plan, or similar, be developed to provide a clear strategy to secure any mitigation and enhancement areas.

4. In regards to the Landscape and Visual chapter (**Chapter 6 of the PEIR**):
   - The visual receptors and viewpoints were previously discussed with AAH, and subsequently AAH issued *AAH TM02* via email to Pegasus with initial comments on receptors and viewpoints, recommending additional viewpoints or amendments to those proposed, and suggested a follow up workshop. It is therefore requested that further landscape and visual consultation is carried out between AAH/LCC and District Authority landscape specialists and the developer team (Pegasus) following the conclusion of this second formal consultation phase.

- For the LVIA, the elements within the Proposed Development, detailed in paragraph 6.2.5, should all reference design parameters, clearly stating extent (location and area) and size (including maximum height) of each element that makes up the development.
- The PEIR identifies the extent of the Study Area of the development of up to 3km at paragraph 6.3.9, which defines the spatial scope of the area to be addressed. The ZTV (Figures 6.3) shows a study area of 5km and along with PEIR (paragraph 6.3.6 and 6.3.7) does identify potential visibility beyond 3km, and from AAH site visits potential visibility of the site and development were identified beyond 3km. The LVIA Chapter should therefore include a clear statement, similar to that provided within paragraphs 6.3.6 to 6.3.9, on the study area (3km or 5km), justification for the extent of the Study Area and figures should also clearly illustrate this extent.
- Paragraph 6.3.10 provides an overview of the proposed development at Bicker Fen Substation, and we would expect the LVIA to fully assess these landscape and visual effects and include viewpoints and visualisations as appropriate.
- Paragraph 6.3.12 states that landscape effects would be limited to the area occupied by the Proposed Development. This may not always be the case, and would anticipate there may be potential effects in the area immediately surrounding the site where the landscape character may indirectly change, for example, currently being an open rural landscape, to one that contains development and artificial landform (bunds) that screen views and effect the perception of openness and "big skies".
- Paragraph 6.3.15 states that *"Representative and illustrative viewpoints have been agreed with Lincolnshire County Council and North Kesteven District Council through the Scoping Report submitted to the Planning Inspectorate".* As stated previously, this is not correct, and as part of the scoping report it was requested that further consultation be carried out with the relevant consultees in regards to the viewpoint locations and visualisations. Subsequently, AAH/LCC issued *AAH TM02*, that provided general comments on the landscape and visual aspects of the scheme as well as comments on proposed viewpoints, which included recommendations for additional views. Paragraph 6.3.67 also identifies (indirectly) comments and initial discussions held between AAH/LCC and Pegasus. The AAH comments have not been incorporated into the PEIR, or shown on Figures 6.3a, 6.3b, and 6.3c at this stage. Therefore we request that consultation is carried out between Pegasus and AAH/LCC in regards to agreeing the viewpoints and visualisations.
- Paragraph 6.3.24 identifies: *"overhead electricity cables on 30m high poles within the Energy Park"*. The extent and location of these needs clarifying as part of the ES to allow for the LVIA to consider these within the assessment.
- In regards to lighting (paragraph 6.3.25), the ES should clearly state what the proposed lighting scheme will comprise, including technical information such as lux levels and how it would be controlled. We would expect the LVIA to provide a visual assessment of this lighting.
- In regards to Assessment of Significance (paragraphs 6.3.33 to 6.3.39), it is assumed the PEIR is stating that only effects of a Major level would be considered as Significant. Therefore, moderate or moderate to major landscape and visual effects may not be considered significant. We disagree with this, which is a variation from typical assessments that may class effects moderate (and above) as significant: no justification in the methodology is provided for this and could lead the assessment as being deemed as underplaying the identification of significant effects.
- Paragraph 6.3.72, bullet 7, states: "*The assessed Proposed Development is based on application drawings that accompany this PEIR and is assessed on the assumption that*

the Proposed Development is delivered in line with these drawings and associated timescales.". This statement causes some confusion as layouts are currently labelled indicative, which we assume is commensurate with the preliminary nature of the PEIR. The submission and LVIA should clearly detail the scheme that the submission will be based upon: indicative layouts or parameter plans.

- Paragraph 6.4.5 identifies PROW Heck/15/1 running along the northern boundary of the site, and also its termination at Head Dyke. This correlates with the online LCC PROW mapping, and while does not connect into a wider network to the east, is a relatively long section (more than 1.6 miles) of PROW that should be considered in the assessment.

Identification of receptors:

- The PEIR identifies a range of landscape and visual receptors within the Study Area.

- The correct National and Local Landscape Character Areas (LCA) have been referred to within the PEIR and cover a range of scales, and there is potential to scope out character areas that would not be affected by the development or those that are at a large scale and would provide context only, such as NCAs.

- Potential landscape receptors at varying scales are identified for consideration in the LVIA within paragraphs 6.4.14 6.4.19. We would also expect a finer-grained site-level (and immediate context) assessment and identification of individual elements or features of the site and landscape/landscape character areas to form the baseline of the LVIA.

- It would be useful to take into account the information collated as part of the Historic landscape characterisation project: *The Historic Character of The County of Lincolnshire (September 2011)*, to ensure that the development is sensitive to the historic landscape. The project documents and the mapping can be accessed here: Historic Landscape Characterisation – Lincolnshire County Council

- Nineteen viewpoints have been identified (paragraphs 6.4.34 and Table 6.3) within the PEIR, which are located on Figures 6.3a, 6.3b, and 6.3c. The visual receptors and viewpoints were previously discussed with AAH, and subsequently AAH issued *AAH TM02* via email with initial comments on receptors and viewpoints, recommending additional viewpoints or amendments to those proposed. At this stage, this consultation or *AAH TM01* has not been incorporated into the PEIR, and we would request further discussions and meetings are held between AAH and other stakeholders with Pegasus.

  Also, as stated and noted in previous correspondence, at this stage, there are not fixed details on the location and appearance/extent of taller/larger elements that form part of the development, which would likely have visual impacts that may require additional viewpoints beyond those initially identified. Additional viewpoints of development at the Bicker Fen Substation (currently on viewpoint 15 would likely cover this) may also be required once final design or parameters have been developed.

- For the PEIR, three viewpoints have been selected by Pegasus to be developed as photomontages (VPs 6, 8, 18). At this stage, these have not been discussed or agreed with AAH/LCC, or as we understand any other stakeholders or appropriate consultees. We request consultation is held with AAH/LCC and other stakeholders in regards to agreeing the views taken forward as photomontages, the AVR Level that would be most

appropriate to illustrate the proposals, which we would assume would be Level 2 or Level 3, however photo wire (Level 0 or Level 1) may be more appropriate in some long distance or fully screened views and what Type (would likely be Type 3 or 4), to Landscape Institute *TGN 06/19 Visual Representation of Development Proposals.*

- Paragraph 6.4.32 identifies groups of visual receptors:
  - The extent of views (approximate start point and endpoint) that are available to receptors traveling along linear elements (such as roads or PROW) would be useful, e.g. along a 200m stretch of the road looking north, or: from receptors traveling south along high points of the PROW.
  - In regards to the receptor groups: *Road Users,* while many of the surrounding lanes and tracks within the study area are rural and remote in character and primarily used for motor vehicles and farm access, they are also used by dog walkers, horse riders and leisure cyclists, and subsequently the assessment should consider this within the baseline and methodology. The local value of these networks should be considered beyond being simply vehicle "road networks", they also provide suitable connections for walkers improving the connectivity of the wider recreational footpath/PROW network.

- The assessment of Landscape Character Effects (from paragraph 6.5.2) gives an initial judgement on the level of effect; however we would urge caution in regard landscape character areas, which often are assessed as having limited magnitudes of change as the change would be small scale and/or extent (development site) would only affect a small percentage of the overall, much larger, character area. Using this approach, any development in a large character area will always be deemed relatively "small". We would encourage the LVIA assess what the change would be in that part of the character area and what identified key elements identified within the character areas are impacted, and how development change would affect those elements or characteristics.

5. In regards to the Residential Visual Amenity chapter (**Chapter 7 of the PEIR**):
   - No comments on this chapter, however would suggest reference is made in the RVAA to considering residential views along the cable route and works associated with the Bicker Fen Substation.

C. Detailed Comments on Figures included within Preliminary Environmental Information Report Volume 1:

1. Generally: Figures are well presented and read well.

2. Figure 2.1 Indicative Site Layout: Could it be clarified if this plan is intended to ultimately be developed to be issued as a parameter plan indicating areas of development and areas of mitigation and enhancement? This would make understanding the scheme proposed and subsequently the LVIA easier as it would be clear where and how areas would be changed from the baseline, or clearly describe/illustrate mitigation used – this would be pertinent where the avoidance of a likely significant effect is reliant upon illustrated mitigation measures. If not, this could be misleading as development could theoretically be anywhere on site, based on a worst case approach, therefore if plans are indicative, they should be very clearly labelled so.

The larger and taller elements such as substations and battery storage are also indicated on this plan. If these elements were accompanied with clear design parameters, it would aid understanding of the scheme as a "worst case".

Due to the evolving nature of the layouts, there are currently no Landscape and Visual Comments on the layout itself. However, it is requested that additional meetings and workshops be held with AAH/LCC to discuss these landscape and visual comments prior to the final ES and scheme submission, and also that a continued dialogue is maintained in regards to the development proposals, including the location of any larger structures or buildings such as the substation.

3. Figure 3.1 Working Indicative Site Layout and Figure 3.2 Working Indicative Site Layout (Revision E): It has been assumed Figure 2.1 of the PEIR is the most up to date layout, therefore, Figures 3.1 and 3.2 have been included to provide detail on the evolution of the layout based on consultee comments. These provide a useful reference as to how the layout is evolving.

4. Figure 4.1b Proposed Site Access and internal access, Figure 4.1c Proposed Solar PV Development Areas, Figure 4.1d Proposed Battery Storage and New Infrastructure, Figure 4.1e Proposed Ecological Enhancements for Operational Energy Park, and Figure 4.1f Proposed Permissive Footpath: Similarly for the comments for Figure 2.1, could it be clarified if these plans are intended to ultimately be developed in the ES to be issued as a parameter plans indicating areas of development and areas of mitigation and enhancement?

5. Figure 6.2 Visual Receptors Plan: The Sustrans route and PROW are marked on the plan, however other potential visual receptors are not located on the figure which would be useful: settlements, transport routes and the railway are difficult to distinguish from other elements, particularly interspersed with the drainage ditches which criss-cross the study area.

6. Figure 6.3 Screened Zone of Theoretical Visibility and Proposed Viewpoint Locations for Substation Locations, Energy Storage Areas, and Solar Area (3 separate SZTVs combined into one figure): This is a useful figure, and illustrates a lot of pertinent information beyond what has previously been presented. However, for this to be a useable figure for the LVIA, the locations and design parameters of the substations and storage areas would need to be fixed and ZTV run on the maximum parameters. The plan does illustrate additional areas of potential visibility that are not covered by the currently proposed viewpoints. The proposed viewpoints were previously discussed with AAH, and subsequently initial comments on viewpoints within *AAH TM02*, recommending additional viewpoints or amendments to those proposed, have not been incorporated into the figures, and we would request further discussions and meetings are held between AAH and other stakeholders with Pegasus.

7. Figure 6.4 Context Baseline Views: We request additional consultation is carried out to agree additional viewpoints, as per consultation comments within *AAH TM02.*
   - Comments on specific viewpoints as follows:
     - VP01B: View needs rotating to the right (south) to incorporate the southern area of the site. View is currently the same as VP01A.
     - VP08: The view doesn't include the southern section of the site and may benefit from being split over two sheets (to create view 08A and 08B).

8. Figure 6.7 Photomontages: Three viewpoints have been developed in the PEIR as photomontages (VPs 6, 8, 18), which we assume have been included as examples of those to be in included within the LVIA. At this stage, photomontages have not been discussed or agreed with AAH/LCC, or as we understand any other stakeholders or appropriate consultee. We request consultation is held with AAH/LCC and other stakeholders in regards to agreeing the views taken forward as photomontages, the AVR Level that would be most appropriate to illustrate the proposals, which we would assume would be Level 2 or Level 3, however photo wire (Level 0 or Level 1) may be more appropriate in some long distance or fully screened views and what Type (would likely be Type 3 or 4), to Landscape Institute *TGN 06/19 Visual Representation of Development Proposals.* Taller/larger elements appear to have been shown on the photomontage (purple blocks) which appear as to reflect design parameters. The LVIA should include these elements to the maximum design parameters associated with the application, and the photomontages/methodology should clearly state that this is what is being illustrated. If the locations of these elements are not fixed as part of the application, this should also be clearly stated to aid transparency.

D. Detailed Comments on Preliminary Environmental Information Report. Volume 2: Appendices

1. Appendix 6.1 LVIA Methodology:
   - Paragraph 1.7 refers to a 5km Study Area, however paragraph 6.3.9 of the main text refers to a 3km Study Area. The LVIA should clarify this and clearly state what the study area is and provide justification for its extents. We would also query the statement that views of proposals beyond 1km would not be perceptible. This seems unlikely, particularly larger and taller elements of the development such as the substations.
   - Paragraph 2.1 states that landscape effects would be limited to the area occupied by the Proposed Development. This may not always be the case, and would anticipate there may be potential effects in the area immediately surrounding the site where the landscape character may indirectly change, for example, from currently being an open rural landscape, to one that contains development and artificial landform (bunds) that screen views and effect the perception of openness and “big skies”.
   - Paragraph 2.3 and Table 2 in regards to landscape value should include LI guidance: *Technical Guidance Note (TGN) 2/21 Assessing landscape value outside national designations, May 2021 by the Landscape Institute.*
   - Table 2 implies that only landscapes that are designated may be classed as having high value, which is not always the case and LI guidance (TGN 2/21) in regards to assessing landscape value should be utilised.
   - Table 4 provides criteria for assessing landscape sensitivity based on landscape value and susceptibility. While not a requirement, would this information be clearer presented in a matrix that would guide the judgement of landscape sensitivity?
   - Table 6 focusses mostly on the **scale** of change on Landscape Character and doesn’t cover **duration** and **extent** of change adequately. These aspects should also be covered within the methodology and subsequent LVIA.
   - Table 9 provides criteria for assessing visual sensitivity based on view value and receptor susceptibility. While not a requirement, would this information be clearer presented in a matrix that would guide the judgement of visual sensitivity?
   - Table 10 focusses mostly on the **scale** of change for visual receptors and doesn’t cover **duration** and **extent** of change adequately. These aspects should also be covered within the methodology and subsequent LVIA.
   - Paragraph 5.3 and Table 11 states that only effects of a Major level would be considered as Significant. Therefore the methodology is stating that moderate or moderate to major

landscape and visual effects may not be considered significant. We disagree with this, which is a variation from typical assessments that may class effects moderate (and above) as significant: no justification in the methodology is provided for this and could lead the assessment as being deemed as underplaying the identification of significant effects.

- Table 12 provides typical descriptors of landscape effects, however this approach feels restrictive and could imply, for example, that only low sensitivity receptors may experience minor adverse effects, which is not the case. Could this information be presented in a more flexible way that removes specific judgements from the descriptions?
- Table 13 provides typical descriptors of visual effects, however similarly to Table 12, this approach feels restrictive and could imply, for example, that only low sensitivity receptors may experience minor adverse effects, which is not the case. Could this information be presented in a more flexible way that removes specific judgements from the descriptions?
- No methodology for cumulative landscape and visual effects is provided. We would expect this to be included and carried out within the LVIA.

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30th August 2022

AAH consultants

Technical Memorandum 4 (AAH TM03):

Lincolnshire County Council, Heckington Fen Solar Park Project: Relevant Representation Landscape and Visual Comments

Introduction

AAH Consultants, on behalf of Lincolnshire County Council (LCC), have reviewed the relevant Landscape and Visual elements of the Heckington Fen Solar Park DCO Application to provide initial comment to be incorporated within a combined Relevant Representation statement from LCC. The Heckington Fen Solar Project submission documents are available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010123/documents

Information downloaded is as follows (which include any associated sub-appendices):

- Environmental Statement Chapter 6: Landscape and Visual;
- Chapter 6 Appendices:
  - **Appendix 6.1** LVIA Methodology (document reference 6.3.6.1)
  - **Appendix 6.2** Omitted Viewpoints A1 and A3 at Great Hale Fen (document treference 6.3.6.2)
  - **Appendix 6.3** Arboricultural Survey, Impact Assessment and Protection Plan (document reference 6.3.6.3)
  - **Appendix 6.4** Extract from National Character Area 46 The Fens (document reference 6.3.6.4)
  - **Appendix 6.5** Extract from the North Kesteven Landscape Character Assessment (document reference 6.3.6.5)
  - **Appendix 6.6** Extract from the Landscape Character Assessment of Boston (document reference 6.3.6.6)
  - **Appendix 6.7** Scoping Out – Landscape Character Receptors (document reference 6.3.6.7)
  - **Appendix 6.8** Scoping Out - Visual Assessment (document reference 6.3.6.8)
  - **Appendix 6.9** Detailed Visual Assessment (document reference 6.3.6.9)
  - **Appendix 6.10** Summary of Section 42 Consultation Responses since PEIR
    (document reference 6.3.6.10)
  - **Appendix 6.11** Legislative and Policy Framework (document reference 6.3.6.11)
- Figures to be read in conjunction with Chapter 6:
  - **Figure 1.1** Order Limits (document reference 6.2.1)
  - **Figure 1.4** Filed Plan (document reference 6.2.1)
  - **Figure 2.1** Indicative Site Layout (document reference 6.2.2)
  - **Figure 2.2a** Cumulative Sites - Shortlisted (Regional Context)

(document reference 6.2.2)

- **Figure 2.2b** Cumulative Sites - Shortlisted (Local Context) (document reference 6.2.2)
- **Figure 2.3** Proposed Development (document reference 6.2.2)
- **Figure 3.5** Indicative Cable Route (document reference 6.2.3)
- **Figure 3.6 Environmental Designation Plan (document reference 6.2.3**
- **Figure 4.3** Indicative Phasing Plan (document reference 6.2.4)
- **Figure 6.1a** Site Location Plan – Energy Park (document reference 6.2.6)
- **Figure 6.1b** Site Location Plan – Off-site Cable Route Corridor & NationalGrid Bicker Fen Substation Extension Works (document reference 6.2.6)
- **Figure 6.2a and 6.2b** Landscape Strategy Plan (document reference 6.2.6)
- **Figure 6.3** Landscape Character Plan (document reference 6.2.6)
- **Figure 6.4** Visual Receptors Plan (document reference 6.2.6)
- **Figure 6.5a** Screened Zone of Theoretical Visibility - Solar Areas and Proposed Viewpoint Locations Plan (document reference 6.2.6)
- **Figure 6.5b** Screened Zone of Theoretical Visibility - Substation Equipment with EES and Proposed Viewpoint Locations Plan (document reference 6.2.6)
- **Figure 6.5c** Screened Zone of Theoretical Visibility - National Grid Bicker Fen Substation Extension Works and Proposed Viewpoint Locations Plan (document reference 6.2.6)
- **Figure 6.6** Context Baseline Views and Photoviews (document reference 6.2.6)
- **Figure 6.7** Photomontages (document reference 6.2.6)

The Proposed Development comprises the construction, operation (including maintenance) and decommissioning of ground mounted solar PV panel arrays, an energy storage system (ESS) facility and supporting infrastructure. The land within the Order limits that forms the subject of this ES extends to approximately 644.5ha, encompassing the entire Proposed Development. The Energy Park extends to approximately 524ha as one site.

The Proposed Development includes the following key components:

- Solar PV panels;
- PV module mounting structures;
- Inverters;
- Transformers;

- Switchgear;
- Cabling (including extra high, high, and low voltage power, earthing, communication, and control) – below ground for the grid connection to Bicker Fen, and in trenches and/or behind the panels on the Energy Park;
- Energy Storage Systems (ESS) (technology not determined at this time);
- Onsite Substation comprising a substation and control buildings;
- Fencing, gatehouses, and security measures;
- Internal access tracks;
- Community orchard;

- Permissive path;
- Construction of new access point onto highway (previously consented as part of the previous wind park application);
- Landscaping including creation of new habitat areas;
- Construction areas, worker facilities, temporary compounds, and infrastructure;
- Digging of cable trench and laying cables for connection to the National Grid Bicker Fen Substation;
- Installing access points along the Cable Route Corridor for the grid connection; and
- Extension of National Grid Bicker Fen Substation and installation of above ground equipment.

By reason of its mass and scale, the proposed development would lead to significant adverse effects upon landscape character and visual amenity. The development has the potential to transform the local landscape by altering the character on a large scale. This landscape change also has potential to affect wider landscape character, at a regional or county scale, by replacing large areas of agricultural or rural land with solar development, affecting the current openness, tranquillity, and agricultural character, that are identified as defining characteristics of the area. We are particularly concerned about the landscape character effects through changes to the land use over a large area.

The scale and extent of development would also lead to significant adverse effects on views from receptors, changing from views within an agricultural or rural landscape to that of a landscape containing large scale solar development. From close range views, the development has been identified in the LVIA as resulting in a significant change to high and medium sensitivity receptors, including several along the A17 and A1121 corridors, as well as the isolated farmsteads along the B1395. The area of the DCO is predominantly flat, which would limit long distance views, however, with limited existing vegetation cover long distance views of the site and development are possible. Intermittent views may be possible from the railway line, which follows the A1121 before heading towards Heckington to the south of the site along Heckington Fen.

The cumulative landscape and visual effects of the proposed development are also of concern, particularly when assessed alongside the proposed Beacon Fen solar farm which is proposed to the north and south of Heckington. The mass and scale of these projects combined would lead to adverse effects upon landscape character and visual amenity over an extensive area. The landscape character of the local, and potentially regional area may be completely altered, particularly when experienced sequentially while traveling through the landscape. The cut-off date for inclusion of projects was 31st December 2022, which may explain why the Beacon Fen proposal is not included within the cumulative diagram considering local projects.

The submission has provided detailed information in regards landscape mitigation for the site, in figure 6.2 Landscape Strategy and figure 4.1 Proposed Ecological Enhancements. These are supplemented by the Outline Landscape and Ecological Management Plan, reference 7.8. Document 6.3 the Arboricultural Impact Assessment, Tree Survey and Tree Protection Plan details the trees and hedgerows within the DCO limits and proposes the management and protection. The two plans within the document detail the location of the trees assessed, identifies where access will be entered and where storage compounds will be established. It is unclear the extent of disturbance to hedgerows from construction activity.

It would be beneficial to clarify the extents of any hedgerow removals to ensure the LVIA fully assesses these changes, and also where removed hedgerows may be replanted or potentially translocated. One permanent and one existing access point is shown, but it needs assessment of the impact on vegetation within these areas.

The viewpoints have responded to previous communication and have covered a range of receptors across the study area, which has been set at 5km with a core study area of 1.5km this encompasses a sufficiently wide area to assess the landscape and visual impacts.

The proposal would evidently deliver landscape and ecological improvements through mitigation areas and planting. However, this will be dependent upon the information set out in the *Outline Landscape and Ecological Management Plan* and *Figure 6.2: Landscape Strategy*, which should be further explored, and assume would be refined at the detailed design stages.

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7th June 2023