NORTH LINCOLNSHIRE GREEN ENERGY PARK

Planning Act 2008

Infrastructure Planning (Applications Prescribed Forms and Procedure) Regulations 2009

APFP Reg. 5(2)(a)

Infrastructure (Environmental Impact Assessment) Regulations 2017

North Lincolnshire Green Energy Park

Volume 6

Environmental Statement

6.2.11 Landscape and Visual Impact

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Acronyms and Abbreviations

Name	Description
ACC	Air Cooled Condensers
AGI	Above Ground Installation
BAT	Best Available Techniques
BEIS	Department for Business, Energy and Industrial Strategy
BGS	British Geological Society
BMVL	Best and Most Versatile Land
C4SL	Category 4 Screening Levels
CBMF	Concrete Block Manufacturing Facility
CBR	California Bearing Ratio tests
CCUS	Carbon Capture Utilisation and Storage Facility
CDM	Construction Design and Management
CEMP	Construction Environmental Management Plan
CHP	Combined Heat and Power
CIEH	Chartered Institute of Environmental Health
CIRIA	Construction Industry Research and Information Association
CLEA	Contaminated Land Exposure Assessment
CO_2	Carbon Dioxide
CoCP	Code of Construction Practice
CSM	Conceptual Site Model
DCLG	Department for Communities and Local Government
DCO	Development Consent Order

Name	Description
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DHN	District Heat Network
DHPWN	District Heat and Private Wire Network
dML	deemed Marine Licence
DoW:CoP	Definition of Waste: Code of Practice
DQRA	Detailed Quantitative Risk Assessment
EIA	Environmental Impact Assessment
EMFs	Electric and Magnetic Fields
EPA	Environmental Protection Act
EPH	Extractable Petroleum Hydrocarbons
EPR	Environmental Permitting Regulations
ERF	Energy Recovery Facility
ERM	Environmental Resources Management
ES	Environmental Statement
EU	European Union
EV	Electric Vehicle
FGTr	Flue Gas Treatment residue
GAC	Generic Assessment Criteria
GQRA	General Quantitative Risk Assessment
H_2	Hydrogen
HRA	Habitats Regulations Assessment
HSE	Health and Safety Executive
IBA	Incinerator Bottom Ash
IED	Industrial Emissions Directive
IPC	Integrated Pollution Control
IPPC	Integrated Pollution and Prevention Control
LBMMP	Landscape and Biodiversity Management and Monitoring Plan
LDF	Local Development Framework
LQM	Land Quality Management
M bgl	Metres below ground level
MCA	Mineral Consultation Area

Name	Description
MCAA	Marine and Coastal Access Act
MCHLG	Ministry for Communities, Housing and Local Government
MMO	Marine Management Organisation
MSA	Mineral Safeguarding Area
MWh_e	Electrical generation in megawatt-hours (electric)
MWh_{th}	Heat generation in megawatt-hours (thermal)
NLGEP	North Lincolnshire Green Energy Park
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
PA	Planning Act
PAC	Potential Area of Concern
PAH	Polycyclic Aromatics Hydrocarbons
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PPE	Personal Protective Equipment
PPG	Planning Practice Guidance
PRF	Plastic Recycling Facility
PV	Photovoltaic
PWN	Private Wire Network
QRA	Qualitative Risk Assessment
RDF	Refuse Derived Fuel
RHTF	Residue Handling and Treatment Facility
S21	Solar 21
S4UL	Suitable 4 Use Levels
SAC	Special Area of Conservation
SGV	Soil Guideline Value
SI	Site Investigation
SOCC	Statement of Community Consultation
SoS	Secretary of State
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest

Name	Description
SuDS	Sustainable Drainage Systems
TCPA	Town and Country Planning Act
UK	United Kingdom
ZTV	Zone of Theoretical Visibility

1. INTRODUCTION

1.1 Overview

1.1.1.1 This chapter of the Environmental Statement (ES) identifies and presents the potential impacts and effects on visual receptors and landscape character that are likely to arise from construction and/or operation of the Project. This chapter considers the potential effects of the proposal on:

- the landscape as a resource in its own right – as a result of changes to the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape; and
- views and visual amenity as experienced by people – as a result of changes in the appearance of the landscape.

1.1.1.2 This Landscape and Visual Impact Assessment (LVIA) has been undertaken by Chartered Members of the Landscape Institute (CMLI) and should be read with reference to Chapter 3: Project Description (**Document Reference 6.2.3**).

1.1.1.3 The chapter is supported by figures presented in Appendix A and B. These comprise:

- mapping on Figures 2-4 (Appendix A)
- visualisations on Figures 5-15 (Appendix B).

1.2 Guidance and Standards

1.2.1.1 The methodology for this assessment is based on the principles set out in the *Guidelines for Landscape and Visual Impact Assessment* (GLVIA3; Landscape Institute, 2013). This is the standard reference for undertaking landscape character and visual assessments in the UK.

1.2.1.2 In addition, viewpoint photography and visualisations accompanying this assessment have been undertaken in accordance with guidance given in *Technical Guidance Note 06/19 Visual Representation of Development Proposals* (Landscape Institute, 2019).

1.3 Study Area

1.3.1.1 The assessment utilises two distinct study areas, as outlined below, and illustrated on Figure 2:

- an inner study area of 2.5 km radius for the examination of effects on landscape character and more detailed assessment of effects on views (herein defined as the 'Landscape Study Area'); and
- an outer study area of 7.5 km radius for the examination of effects on views and visual amenity (herein defined as the 'Visual Study Area').

1.3.1.2 The centre point of these radii is the proposed location of the ERF stack, as this is the tallest element of the Project and likely to be the most prominent in the landscape.

1.3.1.3 The Landscape Study Area comprises low-lying landform associated with the floodplain of the River Trent, with arable agriculture forming the

prevailing land use. The village of Amcotts borders the river's western bank, and Flixborough is on higher ground to the east. Flixborough Wharf and Grove Wharf are adjacent to the river channel itself. Residential and industrial land uses are also present at Scunthorpe's northeastern fringes, centred on the corridor of the A1077. Electricity transmission lines and turbines at Grange Wind Farm (six turbines) form vertical features in the wider landscape.

1.3.1.4 The Visual Study Area comprises much of the urban footprint of Scunthorpe, low-lying floodplain to the west as well as the north-south escarpment. The landscape includes agricultural land and industry associated with the River Trent. Urbanisation and associated ironstone workings within Scunthorpe also form prominent land uses as well as transport corridors and peripheral villages. A network of electricity transmission lines crosses the landscape of the Visual Study Area, converging at Keadby 1 Power Station. Wind farms at Keadby Grange (34 turbines), Bagmoor (eight turbines) and Grange are also prominent on the skyline.

1.4 Scope of the assessment

1.4.1.1 This assessment first considers the baseline landscape and visual conditions in relation to the Landscape and Visual Study Areas. Paragraph 3.16 of GLVIA3 states that the level of detail provided in a baseline assessment should be appropriate and proportional to the scale and type of development and the significance of the landscape and visual effects likely to occur.

1.4.1.2 The assessment has been undertaken to establish the likely effects of the Project on receptors within the Landscape and Visual Study Areas in terms of changes to landscape character and visual amenity. For the purposes of this assessment, the Project is considered to be non-reversible and would form a permanent feature in the landscape. Design measures that have been informed by the design process as well as additional proposals for landscape mitigation are considered as part of the assessment.

1.4.1.3 Cumulative landscape and visual impacts during construction and operation are addressed in Chapter 18 (**Document Reference 6.2.18**).

2. POLICY CONTEXT, LEGISLATION, GUIDANCE AND STANDARDS

2.1.1.1 A general overview of relevant planning policy is included in Chapter 2 (**Document Reference 6.2.2**). However, there are some areas of policy that specifically relate to landscape and visual amenity, and these are outlined below.

2.2 National Planning Policy

2.2.1.1 National Planning Policy on Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to landscape and visual, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1; DECC, 2011a), and the NPS for Renewable Energy Infrastructure (EN-3; DECC, 2011b).

Table 1: Summary of NPS EN-1 Provisions

NPS EN-1 provision	How and where considered in the ES
The Applicant's landscape and visual assessment should include reference to any landscape character impacts relevant to the proposed Project. Relevant policies in local development plans should also be considered (NPS EN-1, paragraph 5.9.5).	Landscape character impacts are considered in Section 8.1. Local development plan policies relating to landscape designation are discussed in Section 2.3.
The Applicant's assessment should include the likely effects on landscape components and landscape character during construction and operation (NPS EN-1, paragraph 5.9.6).	Effects on landscape components and landscape character during construction and operation are assessed in Section 8.1.
The assessment should report on the visibility and conspicuousness of the Project at construction as well as the operational effects on views and visual amenity. This should include effects of light pollution on local amenity and nature conservation (NPS EN-1, paragraph 5.9.7).	Effects on visual amenity and views during construction and operation are assessed in Section 8.2. This includes consideration of the effects of lighting on visual amenity.
The existing character of the local landscape, its quality, its value and its capacity to accommodate change should all be considered in judging the impact of a project on landscape (NPS EN-1, paragraph 5.9.8).	The existing character of the local landscape is discussed in Section 6. The approach to determining the value of the local landscape is considered in Section 5.2. Effects on landscape character are assessed in Section 8.1 with reference to the susceptibility of the landscape to the change proposed, and the value placed on the landscape.
NPS EN-1, Paragraphs 5.9.9 to 5.9.14 provide advice in relation to applications affecting nationally and locally designated landscapes.	There are no nationally or locally designated areas within the landscape and visual study areas.
The IPC should consider the duration and reversibility of any adverse effects and	The duration and reversibility of all effects are considered as part of the impact

NPS EN-1 provision	How and where considered in the ES
whether any adverse impact on the landscape will be capable of being reversed in a timescale that the IPC considers reasonable (NPS EN-1, paragraph 5.9.16).	assessment, as set out in the methodology in Section 5.
The IPC should consider the design mitigation of the Project and whether this has sought to minimise harm to the landscape (NPS EN-1, paragraph 5.9.17).	Mitigation is discussed in Section 7.
The IPC should ensure applicants have taken into account the landscape and visual impacts of visible plumes from chimney stacks and/or the cooling assembly (NPS EN-1, paragraph 5.9.20).	The predicted adverse effects on views are clearly set out in Section 8.2, and take account of visible plumes from the ERF stack.

Table 2: Summary of NPS EN-3 Provisions

NPS EN-3 provision	How and where considered in the ES
NPS EN-3 paragraphs 2.5.46 to 2.5.52 set out specific considerations for LVIA of ERF facilities and refer to the paragraphs from NPS EN-1 quoted above. Good design is emphasised, including mitigation through building design and architectural treatment. Paragraph 2.5.52 sets out an expectation that sites should be visually enclosed at low level by e.g. earth mounds or tree planting.	The LVIA is based on the maximum building parameters to ensure a worst-case assessment. Design is addressed through the illustrative building proposals and mitigation planting as set out in Section 7.

2.2.1.2 Although the Project is an NSIP, the NPPF (MCHLG, 2021) should also be taken into account, as noted in Paragraph 5 of the NPPF.

2.2.1.3 In paragraph 174, the NPPF states that:

> *'Planning policies and decisions should contribute to and enhance the natural and local environment" by, amongst other things, "protecting and enhancing valued landscapes […] (in a manner commensurate with their statutory status or identified quality in the development plan)'.*

2.2.1.4 The provisions within local planning policy in relation to landscape are discussed below.

2.3 Local Planning Policy

2.3.1.1 The current adopted North Lincolnshire Local Development Framework and Core Strategy (North Lincolnshire Council, 2011) sets out the overall strategic direction for North Lincolnshire and provides policies for managing growth and development in the area up to 2026.

2.3.2 CS5: Delivering Quality Design in North Lincolnshire

2.3.2.1 This policy sets out that new development should be designed to be appropriate for the local context and contribute to creating a sense of place. Designs which do not improve the character and quality of the area will not be accepted.

2.3.2.2 Of particular relevance to the LVIA are the goals to:

- Consider the relationship between any buildings and the spaces around them, and how they interact with each other as well as the surrounding area. The function of buildings should also be considered in terms of its appropriateness for the context in which it is located; and
- Incorporate appropriate landscaping and planting which enhances biodiversity of geological features whilst contributing to the creation of a network of linked greenspaces across the area. Tree planting and landscaping schemes can also assist in minimising the impacts of carbon emissions on the environment.

2.3.2.3 These goals have informed the development of mitigation measures, as described in Section 7.

2.3.3 CS16: North Lincolnshire's Landscape, Greenspace and Waterscape

2.3.3.1 This policy states the importance of protecting and improving the network of landscape, greenspace and waterscape. This includes:

- requiring development proposals to improve the quality and quantity of accessible landscape, greenspace and waterscape where appropriate;
- requiring development proposals to address local deficiencies in accessible landscape, waterscape and greenspace where appropriate; and
- requiring the protection of trees, hedgerows and historic landscape to be specified where appropriate.

2.3.3.2 Again, these policy objectives have informed the development of mitigation measures.

2.3.4 North Lincolnshire Local Plan

2.3.4.1 The Local Development Framework replaced the North Lincolnshire Local Plan (North Lincolnshire Council, 2003) in 2011. Although most of the policies included in the document were "saved", a number of policies were deleted from the adopted North Lincolnshire Local Plan following the expiry of the initial period for saving policies. This includes policies relating to local landscape designations, which are therefore no longer relevant. A full list of relevant saved policies is included in Chapter 2 (**Document Reference 6.2.2**). These include Policy LC7, which states that "*special attention will be given to the protection of the scenic quality and distinctive local character of the landscape*", and refers to the North Lincolnshire landscape character assessment, which is discussed in Section 6.

2.3.4.2 The 2021 publication draft North Lincolnshire Local Plan includes Policy DQE1 that refers to Areas of High Landscape Value. The wooded Lincoln Edge Cliff between Whitton and Flixborough, to the north of the Energy

Park Land, is identified as one of these Areas, which are considered 'particularly sensitive to development'. This area is part of the Lincolnshire Edge landscape character area that is considered in Section 6.

3. CONSULTATION

3.1.1.1 Table 3 and Table 4 below present excerpts from the scoping opinion received from the Planning Inspectorate, and consultation responses on the PEIR specific to the LVIA assessment, respectively. The tables describe how each response has been addressed and, as appropriate, where more information can be found in the ES.

Table 3: Scoping Consultation Responses

PINS ID	Applicant's proposed matters to scope out	Inspectorate's comments	Response / Action	Reference within this document
4.7.1	N/A	No matters have been proposed to be scoped out of the assessment.	N / A	N / A
ID	**Other Points**	**Inspectorate's comments**	**Response / Action**	**Reference**
4.7.2	Visibility	As stated in Paragraph 12.5.1.2, actual visibility of the Project can only accurately be determined by site surveys and photomontages. These methods should be undertaken and the results of the survey and the photomontages should be included within the ES.	Correspondence with NLC dated 02 March 2021 outlined how the Zone of Theoretical Visibility (ZTV) would be supplemented with site surveys and visualisations to assess the extent of visibility of the Project.	N/A
4.7.3	Study Area	The Study Area utilises a 7.5km Study Area based on professional judgement. Effort should be made to agree the Study Area with the relevant statutory consultation bodies.	The broad principles and structure of the LVIA were outlined in correspondence with NLC dated 02 March 2021. Confirmation of the agreed approach was received from NLC on 23 March 2021.	N/A
4.7.4	Viewpoints	The ES should provide the rationale behind choosing the viewpoint locations. The ES should also provide the actual location of the viewpoints and ensure that photomontages from these	NLC was contacted on 02 March 2021 seeking agreement with the proposed viewpoint locations for inclusion within the LVIA. The objective was to identify representative viewpoint and visualisation locations which covered the range of likely views	N/A

PINS ID	Applicant's proposed matters to scope out	Inspectorate's comments	Response / Action	Reference within this document
		viewpoints depict the worst case scenario where vegetative screening is limited. Viewpoints should also depict the Project during operation, the different stages of construction and with and without mitigation measures.	from different receptor groups. 10 No. representative viewpoints were proposed, defined by both the ZTV and professional judgement. Five of these locations were also identified for the preparation of visualisations. Verification of the suitability of the viewpoint locations was received on 23 March 2021. However, the consultation response requested the inclusion of an additional viewpoint from land at the edge of the Phoenix Local Nature Reserve / near the Site of Flixborough All Saints Church and Anglo Saxon Remains (scheduled monument).	
4.7.5	Lighting	Visual impacts and impacts on landscape character from the lighting associated with the Project should be considered and included within the assessment, with reference to relevant technical guidance such as the Institute for Lighting Professionals Guidance Note 1 for the reduction of obtrusive light 2020.	The design of the Project will be informed by the development of the outline lighting strategy presented in Annex 4 (**Document Reference 6.3.4**). The assessment has been undertaken based on the assumptions set out in this strategy document.	See Section 8

3.1.1.2 North Lincolnshire Council (NLC) was contacted on 02 March 2021 seeking agreement with the intended viewpoint locations and approach to the assessment, as outlined in the Scoping Report (dated October 2020) and Scoping Opinion issued by the Planning Inspectorate. The objective was to identify representative viewpoint locations which covered the range of likely views from different receptor groups as well as agree on the use of two distinct Study Areas for the landscape and visual assessments. Ten representative viewpoints were proposed, defined by both the ZTV and professional judgement.

3.1.1.3 Verification of the suitability of the viewpoint locations was received on 23 March 2021. However, the consultation response set out a request for an additional viewpoint from land at the edge of the Phoenix Local Nature Reserve / near the site of Flixborough All Saints Church and Anglo Saxon Remains (scheduled monument). Photography at this location was recorded during a site visit on 30 March 2021. All viewpoints are listed in Section 6.4.6.

3.1.1.4 Table 4 presents relevant comments made during Section 42 and Section 47 consultation specific to Landscape and Visual Amenity. The table describes how each response has been addressed by the Project. Responses have been included when they are directly relevant to the Infrastructure Planning (Environmental Impact Assessment) Regulation 2017 (the Infrastructure EIA Regulations 2017), have required a technical clarification and / or further impact assessment. The full set of responses is contained in the Consultation Report (**Document Reference: 7.1 Appendix I-1**).

3.1.1.5 The consultee types for the purposes of statutory consultation under the Planning Act 2008 are as follows:

- s42(a) is with prescribed consultees;
- s42(b) is with local authorities;
- s44 is with consultees with an interest in land; and
- s47 is with the local community.

Table 4: Section 42 and Section 47 Consultation Responses on the PEIR

Consultee type	Consultee	Comment	Response / Action	Reference within this document
S42(a)	Burton upon Stather Parish Council	There are no environmental enhancements since there is already a lovely environment that does not need enhancing. The residents like the current environment with tranquil riverside and woodland walks. This proposed park would have a major impact on the local environment. The new wetland and other proposals are totally unnecessary since they are already in the area. This proposal will destroy the local landscape rather than enhance it.	The way the Project interacts with people, the landscape, water and the local environment has been a key consideration for our design. Beyond supplying low-carbon energy, we want the Project to leave a positive legacy. One of the Project Principles is to 'protect, restore and promote the rich biodiversity and ecology of local terrestrial ecosystems', which we have sought to deliver through the creation of the wetlands and woodlands. The area of the proposed wetlands is currently intensively farmed under an arable rotation regime. The wetland will provide a rich and diverse habitat which will greatly enhance the existing farmland habitat, supporting a greater variety of plants and species. The Project as a whole will provide at least 10% BNG, meaning that there will be gain in the environmental value of the site as a result of the Project. Details of this are set out in the Biodiversity Net Gain Report in Appendix I of Chapter 10: Ecology and Nature Conservation in the Environmental Statement **(Document Reference 6.2.10).** The Project will enhance the riverside along Stather Road making it more accessible to the public. Stather Road will be closed (stopped up) north of the existing pumping station, restricting vehicular access and allowing pedestrians and cyclists to walk and cycle along this stretch of the	N / A

Consultee type	Consultee	Comment	Response / Action	Reference within this document
			River Trent. The existing footpath crossing over the railway line will be upgraded and additional footpaths links will be provided, strengthening the existing network of public rights of way and offering alternative walking routes on the northern edge of Scunthorpe.	
S42(b)	North Lincolnshire Council	It is unclear at this stage if the proposed development will include external lighting during the construction or operational phases. There is the potential for light from the proposed development to adversely impact upon nearby sensitive receptors. If external lighting is proposed then the EHO has recommended that a light impact assessment should be included as part of the application.	It is anticipated that external lighting will be included at construction and operational phases. All lighting will be sensitively designed and kept to the minimum required for safety and security. Operational lighting has been designed to be low-level and facing inwards from the site boundary to minimise light spill and light nuisance. The impact of night-time lighting on views from nearby receptors has been considered in the Landscape and Visual Impact Assessment (LVIA) in Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11**). Mitigation measures are proposed that will further reduce the visibility of external lighting.	Section 7 and Section 8
S42(b)	North Lincolnshire Council	Having reviewed Chapter 14 of the PEIR I can confirm agreement to the approach to the assessment of landscape and visual impacts.	This is noted.	N / A
S42(b)	North Lincolnshire Council	Potential impacts on local and more distant views and landscape character types have been assessed. It is acknowledged that there are existing industrial structures within the local landscape and that the proposed landscape mitigation will provide a degree of landscape	We note that the Council agrees with the scope and findings of the Landscape and Visual Impact Chapter of the PEIR. We also note the concern raised in relation to views of the Project from Amcotts. This view has been the focus of further work on mitigation, as it remains the case that	Section 7

Consultee type	Consultee	Comment	Response / Action	Reference within this document
		integration by year 15. It is also agreed that there will be a major adverse impact on visual amenity when viewed from Amcotts and moderate adverse impact from Flixbourough even at year 15 following the growth of landscaping. Particular concern is raised with regards to relatively short range views across the River Trent from Amcotts to the west.	landscape planting in this area is not feasible, nor would it provide adequate screening. A number of options have been explored, and mitigation measures to be implemented include installation of a visual barrier to screen low-level activity, and architectural treatment of the building exterior to reduce impact. This is detailed in Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11**).	
S42(b)	North Lincolnshire Council	It is considered that further mitigation, such as the architectural mitigation suggested in Section 9 should be considered in detail and secured via DCO Requirements. Whilst it is acknowledged that it is not possible to screen such large-scale structures, screening of low level 'clutter' can be valuable and details of finishes etc. are important in minimising visual impacts against the skyline.	Development of the architectural design response has sought means to reduce building heights and present a lower-impact exterior. An illustrative design has been developed and is presented as 'Indicative Visualisations' in Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11**). The principles built into the illustrative design are set out in the Design Principles and Codes Document (**Document Reference 5.12**), compliance with which will be secured by a requirement in the DCO. Specific measures developed in response to identified landscape and visual impacts include a visual barrier to screen views of low-level activity and 'clutter' in views from Amcotts. Consideration of the skyline is important in all views, and the architectural response seeks to blur the distinction between roof and wall, thereby reducing the impact of the building outline.	Section 7

Consultee type	Consultee	Comment	Response / Action	Reference within this document
S44	Wickes Building Supplies Ltd	We act on behalf of Wickes Building Supplies Ltd (Wickes) and they have instructed us to object to the current consultation exercise for the Green Energy Park. Wickes were formally consulted on the proposed 'scheme' as their existing store, on Glebe Road in Scunthorpe, lies within 3km of the proposed development. Following a review of the submission documents it was apparent that whilst the Wickes store was located some distance to the south east of the main aspects of the proposed 'scheme', the store abutted the red line ('Order Limits') shown as encompassing the A 1077 and B 1431 (Glebe Road) running past the Wickes site and then ending in a red lined 'square' to the south east of the store. Whilst the B 1431, according to the PIER, may be impacted on by construction and operational traffic, it is unclear from the submission documents, specifically chapter 13 'Traffic & Transport' from the PIER, why the 'Order Limits' extend this far and what the red 'square' denotes. There does not appear to be any mitigation proposed on this part of the highway or any construction or similar compounds.	The section of the DHPWN route which runs to Glebe Road has now been removed from the Project, removing direct impacts on the store. This is due to transport and noise impacts of constructing the DHPWN along this section of road.	N / A
S44		Our clients do not object to the principle of the proposed green energy park and support the sustainability and environmental benefits that this would secure. However, they do object to the proposal insofar as it may have a material	The area referred to has been removed, and the DHPWN scheme now takes a route further north, along the junction of Normanby Road and Warren Road.	N / A

Consultee type	Consultee	Comment	Response / Action	Reference within this document
		impact on the operation and trading performance of their Glebe Road store. The latter trades profitably and is in the company's top 100 stores, employing up to 35 local staff. Our clients would be prepared to withdraw their objection if it can be demonstrated that the highway implications of the proposed 'scheme', both during construction and when operational, would not impact materially on the operation or trading performance of their Glebe Road store. In order to reach that finding, the following questions would need to be addressed: 1. The reason why the red line ('Order Limits') extend over this part of Glebe Road (B 1431) and within the vicinity of the Wickes store? 2. What increase in construction and/or operational traffic is envisaged for this part of Glebe Road and where are the references to this in the PIER or other submitted documentation? 3. What does the red square to the south on the periphery of the 'Order Limits', denote or what is it for?		
S44	AB Agri	We are surprised and concerned that the proposed DCO boundary includes part of the AB Agri site without any direct engagement on the matter with our client. As expressed above, the flood earth bund and changes to the access area broadly indicated in the DCO scheme have the potential to substantially impact on ABN's operation.	44.8 has been consulted with under S42(1)(d) of the Planning Act 2008 Act. A workshop has also since been held between the Applicant and #S44.8 on 3rd December 2021. During this workshop, it was explained that the modelling supporting the Flood Risk Assessment (FRA), set out in Annex 3 of the Environmental Statement (**Document Reference 6.3.3**), is appropriate to the current	N / A

Consultee type	Consultee	Comment	Response / Action	Reference within this document
		The blocking off of the existing tertiary access/egress point is also unacceptable to AB Agri. Based on the information available, we strongly object to the proposed inclusion of the AB Agri site and will not agree to the freehold or leasehold sale of this part nor the grant of any other legal rights. Furthermore, without the details/feasibility of the flood mitigation package and the proposed works to First Avenue/Second Avenue, the impact on ABN's existing and future operations cannot be assessed. We request that further information is provided, and that the applicant engages with us properly.	stage that of the Project is at in terms of design. This has been confirmed by the Environment Agency, which has approved the FRA following a second third-party review. In addition, having reviewed #S44.8's response to the statutory consultation, the Order Limits now only include a small area for temporary construction purposes and no permanent land take from #S44.8. The legality and claim to the tertiary access to the port area has been refuted by RMS Ports and no legal title has been provided by #S44.8 to establish a legal right to this access. It is suggested that the Applicant sponsor a discussion with RMS Ports to resolve this between the parties. A flood wall is now proposed rather than a bund and construction of the flood wall will require temporary access, as explained above. However, the Applicant could construct the wall entirely from its own side so that there will be no permanent or temporary land take. The Applicant has shared details of the flood modelling and revised flood wall with #S44.8 and will continue to engage with them in relation to flood defence options.	
S47	Local Community	The development is intended for construction in a valley with the village of Burton upon Stather and Flixborough situated approximately 150 feet above, it follows that any chimney stack output would arguably have to be much higher in order to mitigate any emission issues. Therefore a	Gases produced within the ERF will be treated within the facility to remove contaminants, before any exhaust gases are released into the atmosphere through the chimney stack. The height of the stack at a maximum of 120m (equivalent to 394 ft) has been carefully considered to disperse the treated gases safely.	Section 6, Section 7 and Section 8.

Consultee type	Consultee	Comment	Response / Action	Reference within this document
		390-foot-tall chimney stack will have enormous visual impact on the surrounding rural area.	As set out in Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11)** the stack will be seen in the context of pylons and wind turbines and will not be out of scale with the ERF and the rest of the development.	
S47	Local Community	You can offer all the 'incentives' to try and sway public opinions but it does not change the fact it will devalue land and house prices, be a blot on the landscape and increase pollution	There is no evidence that ERFs reduce the prices of nearby properties. According to research undertaken by Cranfield University in relation to three operational ERFs in the UK, 'Assessing the perception and reality of arguments against thermal waste treatment plants in terms of property prices' (Philips et al, 2014) "no significant negative effect was observed on property prices at any distance within 5 km." This indicated that the perceived negative effect of the thermal processing of waste on local property values is negligible. With regards to visual impact on the local landscape, we have taken this into consideration as part of the guiding principles of our design code. In some locations, such as along the A1077, we will use planting to screen views of the ERF and we are working with all stakeholders and regulatory bodies to mitigate the potential visual impact for all parts of Pthe Project. The principles built into the illustrative design will be secured through the Design Principles and Codes document (**Document Reference 5.12**), compliance with which will be secured by a requirement in the DCO.	Section 7

Consultee type	Consultee	Comment	Response / Action	Reference within this document
			Indeed, Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11)** sets out mitigation measures that will reduce impacts on landscape and visual amenity. The Project will also be designed to prevent and manage potential impacts on pollution and air quality. The inclusion of carbon dioxide capture, cleaning, storage and utilisation from the exhaust gases will provide additional cleaning processes not normally associated with ERF units.	
S47	Local Community	My constituents have raised specific concerns about the scale and appearance of what would be the chimney stack. This structure and other parts of the site are out of context with the North Lincolnshire landscape.	The Flixborough Industrial Estate was chosen partly because of the transport links but also because it is already an industrial setting. We have designed the Project to avoid impacts on views from local properties and published photomontages showing how it could look from different locations as part of the statutory consultation. Photomontages have been produced to show the visual impact and we have further considered potential impacts on views as part of Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11)**. The stack will be seen in the context of pylons and wind turbines and will not be out of scale with the ERF and the rest of the development. Chapter 11: Landscape and Visual Impact of the Environmental Statement	Section 6, Section 7 and Section 8.

Consultee type	Consultee	Comment	Response / Action	Reference within this document
			(**Document Reference 6.2.11)** also sets out mitigation measures that would reduce impacts on landscape and visual amenity.	
S47	Local Community	No screening or consideration to the rural area east of the River is being given.	New woodland and tree planting is proposed along the eastern edge of the proposed buildings, which will help to screen the development in views from the rural area to the east as set out in Chapter 11: Landscape and Visual Impact of the Environmental Statement (**Document Reference 6.2.11).**	Section 7

4. ASSESSMENT PARAMETERS

4.1.1.1 The Project is described in detail within Chapter 3 (**Document Reference 6.2.3**). The following section summarises the key elements and parameters on which the LVIA has been based.

4.1.1.2 The land within the Order Limits (the Application Land) is located to the northwest of Scunthorpe, within the administrative boundary of North Lincolnshire Council (NLC). The Application Land is irregular in shape, comprising several distinct subsections as described below:

- **The Energy Park Land:** This subsection of the Application Land encompasses the core elements of the Project, including the Energy Recovery Facility (ERF); carbon capture utilisation and storage facility (CCUS); bottom ash and flue gas residue handling and treatment facility (RHTF); concrete block manufacturing facility (CBMF); plastic recycling facility (PRF); hydrogen production and storage facility; electric vehicle (EV) and hydrogen (H_2) refuelling station; battery storage; hydrogen and natural gas above ground installations; Visitor Centre and elevated pedestrian walkway; and associated roads, footpaths and parking (See Chapter 3 (**Document Reference 6.2.3**) for full details). The Energy Park Land forms the focus of the LVIA as the permanent built infrastructure is largely within this area.
- **The Northern District Heat and Private Wire Network (DHPWN) Land:** This subsection extends eastwards along the A1077, from the Energy Park Land to Normanby Road and the B1431. The DHPWN to NLC will be developed in this land. Above-ground works within this area will be temporary, and landscape and visual effects will be short term only. This section is not considered further in the LVIA.
- **The Southern District Heat and Private Wire Network (DHPWN) Land:** This land runs broadly north-south following the routes of the A1077 and M181 road corridors, from the south western extent of the Energy Park Land to the B1450. Above-ground works to install DHPWN within this area will be temporary, and landscape and visual effects will be short term only. This section is not considered further in the LVIA.
- **Railway Reinstatement Land:** This subsection of the Application Land will comprise development to reinstate the disused railway line. The LVIA considers the effects of reinstatement, including vegetation clearance, along this route.

4.1.1.3 For the purposes of assessment, the maximum footprint dimensions and maximum heights have been assumed for all project elements, as set out in Chapter 3 of the ES. The tallest element will be the ERF stack at up to 120 m above finished ground level (maximum height 126.6m above Ordnance Datum (AOD)), which it is assumed will have a visible 'plume' under certain atmospheric conditions such as colder days.

4.1.1.4 The parameters for the main Energy Park buildings have changed slightly since PEIR, although the changes are minor in the context of the scale of the Project.

5. ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

5.1 Impact assessment criteria

5.1.1.1 The criteria for determining the significance of effects, is a two-stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of receptors and the magnitude of potential impacts. The assessments of sensitivity and magnitude, in turn, rely on several subsidiary judgements, in line with the approach set out in GLVIA3. GLVIA3 also recommends that these are judged differently for landscape and visual receptors. The following sections set out all the criteria used for judging the sensitivity of landscape and visual receptors, and the magnitude of landscape and visual impacts.

5.2 Sensitivity of landscape receptors

5.2.1.1 GLVIA3 states that the sensitivity of landscape receptors should be assessed in terms of the susceptibility of the receptor to the type of change proposed, and the value attached to the resource.

5.2.1.2 The susceptibility of a landscape receptor is a measure of its ability to accommodate the Project *"without undue consequences for the maintenance of the baseline situation"* (paragraph 5.40, GLVIA3). As recommended in GLVIA3 judgements on the susceptibility of landscape receptors are recorded as high, medium or low according to Table 5.

Table 5: Susceptibility of landscape receptors

Susceptibility	Definition
High	The landscape receptor is less able to accommodate the type of development proposed without undue negative consequences to the baseline situation. Attributes that make up the character offer limited opportunities for accommodating the change without key characteristics being fundamentally altered, leading to a different landscape character.
Medium	The landscape receptor is partly able to accommodate the Project without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape offer some opportunities for accommodating the change without key characteristics being fundamentally altered.
Low	The landscape receptor is more able to accommodate the Project without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape are resilient to being changed by the type of development proposed.

5.2.1.3 Value of the landscape resource is determined in line with Table 6, with reference to:

- a review of designations and the level of policy importance that they signify (such as landscapes designated at an international, national or local level); and
- application of criteria that indicate value (such as landscape quality, scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects, associations e.g. with artists or writers).

Table 6: Definitions of landscape value

Value	Definition
High	Areas or features designated at a national level e.g. National Parks or AONBs, or key features of these with national policy level protection AND/OR Landscapes with high scenic quality, and/or conservation interest, and/or recreational value, and/or cultural associations, which are valued at a national level.
Medium	Areas or features designated at a county or local level e.g. local authority, designated landscapes or key features of designated landscapes AND/OR Landscapes with some scenic quality, and/or some recreational value, or important cultural association which are valued at a district level.
Low	Areas or features that are not formally designated but may be valued at a community level AND/OR Landscape of lower aesthetic quality than the landscapes described above e.g. character is widespread.

5.2.1.4 The sensitivity of a landscape receptor to change is defined as high, medium or low and is based on weighing up professional judgements regarding susceptibility and value, as set out in Table 7.

Table 7: Sensitivity of landscape receptors

Sensitivity	Definition
High	Landscapes which by nature of their character would be less able to accommodate development without change in character, due to their relatively higher susceptibility to the type of change proposed, and/or the higher value placed upon them by society.
Medium	Landscapes which by the nature of their character would be able to accommodate development, subject to careful siting and design, due to their more moderate susceptibility to the type of change proposed, and/or relatively moderate value placed upon them by society.
Low	Landscapes which by nature of their character would be more able to accommodate development without substantive change in character, due to their relatively lower susceptibility to the type of change proposed, and/or lower value placed upon them by society.

5.3 Sensitivity of visual receptors

5.3.1.1 GLVIA3 states that the nature of visual receptors should be assessed in terms of the susceptibility of the receptor to change in views/visual amenity and the value attached to particular views.

5.3.1.2 The susceptibility of visual receptors to changes in views/visual amenity is a function of the occupation or activity of people experiencing the view, and the extent to which their attention is focussed on views (GLVIA3, paragraph 6.32). This is recorded as high, medium or low according to Table 8.

Table 8: Susceptibility of visual receptors

Susceptibility	Definition
High	Communities where views contribute to the landscape setting enjoyed by residents; people engaged in outdoor recreation (including users of public rights of way whose interest is likely to be focused on the landscape); visitors to heritage assets or other attractions where views of surroundings are an important contributor to experience.
Medium	Travellers on road, rail or other transport routes.
Low	People engaged in outdoor sport or recreation which does not depend upon appreciation of views of the landscape; people at their place of work whose attention is not on their surroundings.

5.3.1.3 Recognition of the value of a view is determined in accordance with Table 9 with reference to:

- planning designations specific to views;
- whether it is recorded as important in relation to designated landscapes (such as views specifically mentioned in the special qualities of a National Park or local landscape designation);
- whether it is recorded as important in relation to heritage assets (such as designed views recorded in citations of Registered Parks and Gardens, or views recorded as of importance in Conservation Appraisals); and/or
- the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment, and/or references to them in literature and art.

Table 9: Definitions of value attached to views

Value	Definition
High	Views recorded in World Heritage Site Management Plans or associated with nationally designated landscapes (perhaps identified in management plans), designed views recorded in citations for historic parks and gardens/scheduled monuments or a view regularly used in guidebooks for that part of the county.
Medium	Views associated with local authority designated landscapes or recorded as of importance in Conservation Area Appraisals or experienced by a larger number of visitors to an area as well as the local community.

Value	Definition
Low	Views that may be valued at a community level but which are less scenic and likely to be experienced mostly by the local community.

5.3.1.4 The sensitivity of a visual receptor to change is defined as high, medium or low and is based on weighing up professional judgements regarding susceptibility and value, as set out in Table 10.

Table 10: Sensitivity of visual receptors

Sensitivity	Definition
High	Larger numbers of views and/or those with propriety interest and prolonged viewing opportunities such as residents and users of attractive and well-used recreational facilities. The quality of the existing view, as likely to be perceived by the viewer, is considered to be high.
Medium	Small numbers of residents or moderate numbers of recreational views, with an interest in their environment. Larger numbers of recreational road users. The quality of the existing view, as likely to be perceived by the viewer, is considered to be medium.
Low	Small numbers of recreational viewers with interest in their surroundings. Viewers with a passing interest not specifically focussed on the landscape e.g. workers, commuters. The quality of the existing view, as likely to be perceived by the viewer, is considered to be low.

5.4 Magnitude of landscape impact

5.4.1.1 The magnitude of the impact on each landscape receptor is reported in terms of its scale, geographical extent, duration and reversibility.

5.4.1.2 For landscape receptors, the scale of change depends on the degree to which the character of the landscape is changed through removal of existing landscape components or addition of new ones. Of particular concern is how the changes affect the key characteristics of the landscape. In this assessment, scale is described as imperceptible, small, medium or large, with reference to the definitions set out in Table 11.

Table 11: Scale of landscape change

Magnitude	Definition
Large	Extensive loss or modification of landscape elements or addition of new elements and features which alter the key characteristics and perceptual character of the landscape to a large extent.
Medium	Loss of landscape elements and features or addition of new ones which result in discernible and distinct changes to landscape characteristics and character.
Small	A perceptible but small change to landscape characteristics and character as a result of the loss of landscape elements and features or addition of new ones.

Magnitude	Definition
Imperceptible	A barely perceptible/imperceptible change to landscape character and characteristics

5.4.1.3 The geographical extent over which the landscape effect will be felt is described on a continuum between 'localised', i.e. restricted to the Energy Park Land and immediate surroundings, and 'widespread', across a whole landscape. This is set in the context of the Study Area. The geographical extent is generally described by defining an area over which the effect will occur, with reference to identifiable landscape features.

5.4.1.4 GLVIA3 states that *"duration can usually be judged on a scale such as short term, medium term or long term"*. For the purposes of this assessment, duration has been determined in relation to the phases of development as follows:

- 'short-term' effects are those that occur during construction, and may extend into the early part of the operational phase, e.g. construction activities;
- 'medium-term' effects are those that occur during part of the operational phase, e.g. relating to mitigation planting, where effects may cease or reduce on maturation of planting; and
- 'long-term' effects are those which occur throughout the operational phase, e.g. presence of the Project.

5.4.1.5 Reversibility is reported as reversible, partially reversible or not reversible (permanent), and is related to whether the change can be reversed (e.g. effects arising from the presence of construction traffic will cease at the end of construction, whereas effects arising from the presence of newly built development will be not reversible).

5.4.1.6 The magnitude is derived by combining professional judgements on scale; geographical extent; duration and reversibility as set out in Table 12.

Table 12: Definition of terms relating to magnitude of landscape impact

Scale	Definition
Large	A clearly evident and frequent/continuous change in landscape features and characteristics affecting an extensive area (relative to the Study Area), or the characteristics, and/or notable widespread alteration to the special or key qualities of designated areas.
Medium	A moderate change in landscape features and character, frequent or continuous, and over a wide area, or a clearly evident change either over a restricted area, and/or with some alteration to the special or key qualities of designated areas.
Small	A small change in landscape features and character over a wide area or a moderate change over a more restricted area, and/or barely altering the special or key qualities of designated areas.

Scale	Definition
Imperceptible	An imperceptible, barely or rarely perceptible change in landscape features and character, and/or not altering the special or key qualities of designated areas.

5.5 Magnitude of visual impact

5.5.1.1 The magnitude of the impact on visual receptors is reported in terms of its scale, geographical extent, duration and reversibility.

5.5.1.2 For visual receptors, the scale of change depends on:

- the scale of the change in view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the Project;
- the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture; and/or
- the nature of the view of the Project, in terms of whether views will be full, partial or glimpses.

5.5.1.3 In accordance with GLVIA3, consideration is given to seasonal variation in effects where appropriate. Differences between seasonal views have been indicated within the assessment and considered when reaching conclusions. In this assessment, scale is described as being imperceptible, small, medium or large, with reference to the definitions set out in Table 13.

Table 13: Scale of visual change

Scale	Definition
Large	Large change in view, perhaps where the development is in close proximity in a direct line of vision, or affecting a substantial part of the view, or providing contrast with the existing view.
Medium	Clearly perceptible change in view, perhaps where the developer is relatively close but at an oblique angle or further away in the direct line of vision, creating a distinct new element in the view.
Small	Small change in view, perhaps where the development is at a distance or oblique angle, or where the scale of the landscape absorbs the development well.
Imperceptible	Change in view which is barely perceptible.

5.5.1.4 The geographical extent records the area over which the changes would be visible e.g. whether there is only one point from where the development can be glimpsed, or whether similar views can be gained from large areas. It can also relate to the number of people affected with a larger geographical extent applying where larger numbers of people will be

affected. The geographical extent is generally described in terms of a defined area.

5.5.1.5 For the purposes of this assessment, duration has been determined in relation to the assessment parameters described in paragraph 5.4.1.4.

5.5.1.6 The magnitude is derived by combing professional judgements on scale; geographical extent; duration and reversibility as set out in Table 14.

Table 14: Definition of terms relating to magnitude of visual impact

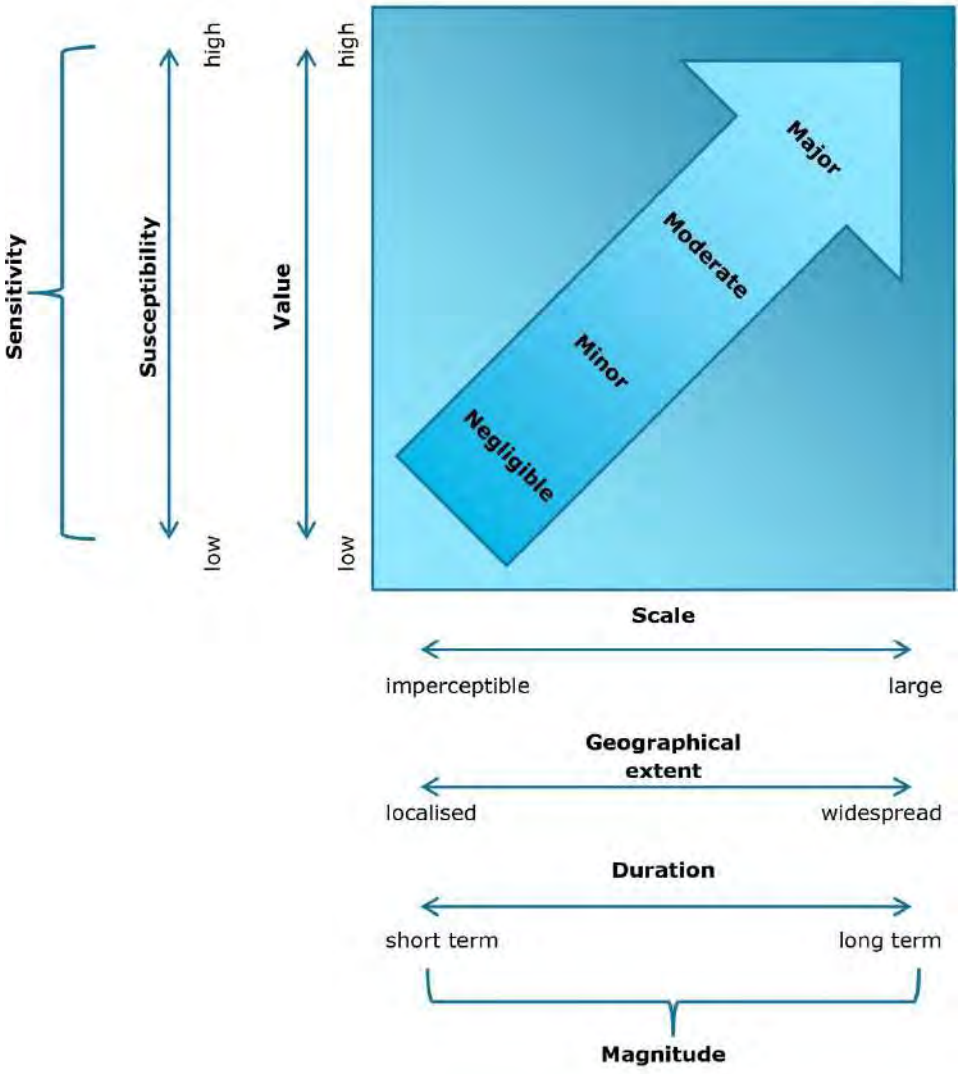
Magnitude	Definition
Large	Major changes in view at close distances, affecting a substantial part of the view, continuously visible over the long term (as defined in paragraph 5.4.1.4), or obstructing a substantial part or important elements of the view.
Medium	Clearly perceptible changes in views at intermediate distances, resulting in either a distinct new element in a significant part of the view, or a more wide-ranging, less concentrated change across a wider area.
Small	Minor changes in views, at long distances, or visible over the short term (as defined in paragraph 5.4.1.4), perhaps at an oblique angle, or which blends to an extent with the existing view.
Imperceptible	A change which is barely visible, perhaps at very long distances or at an oblique angle, and/or visible over the short term (as defined in paragraph 5.4.1.4), and which generally blends with the existing view.

5.6 Significance of landscape and visual effects

5.6.1.1 The significance of the effect upon landscape and visual receptors is determined by correlating the magnitude of the impact and the sensitivity of the receptor. This determination requires the application of professional judgement and experience to take on board the many different variables which need to be considered, and which are given different weight according to site-specific and location-specific considerations in every instance. Judgements are made on a case by case basis, guided by the matrix presented in Figure 1.

5.6.1.2 For the purposes of this assessment, all effects with a significance level of moderate or greater are considered to be ‘significant’ in the context of the Infrastructure EIA Regulations 2017. Any effects with a significance level of minor or less have been concluded to be ‘not significant’ in EIA terms.

Figure 1: Matrix showing the methodology used for the assessment of the significance of the effect



5.7 Direction of effects

5.7.1.1 The direction of effect (positive/beneficial, negative/adverse, or neutral) is determined in relation to the degree to which the proposal fits with landscape character and the contribution to the landscape that the development makes. In this assessment, taking a precautionary stance, all effects are considered to be adverse unless specifically stated otherwise in the assessment.

6. BASELINE AND RECEPTORS

6.1.1.1 This section provides a description of the Application Land and sets out the landscape and visual baseline, against which the Project is assessed. The Study Areas of the assessment were defined by a combination of the ZTV, professional judgement and field survey verification.

6.1.1.2 Figure 2 shows the extent of the Landscape and Visual Study Areas. Beyond this distance, it is anticipated that the Project would be unlikely to give rise to landscape or visual effects.

6.1.2 Desk study

6.1.2.1 A desk study was undertaken to obtain information on landscape and visual resources and receptors across the Study Areas, through a detailed desktop of existing studies and datasets, as set out below in Table 15.

Table 15: Baseline sources

Source	Date	Summary
Natural England	2014	Profile for National Character Area (NCA) 39: Humberhead Levels (Natural England, 2014a). The profile includes a description of the natural and cultural features that shape the landscape, how the landscape has changed over time and the current key drivers for ongoing change.
Natural England	2014	Profile for National Character Area (NCA) 45: Northern Lincolnshire Edge with Coversands (Natural England, 2014b). The profile includes a description of the natural and cultural features that shape the landscape, how the landscape has changed over time and the current key drivers for ongoing change.
North Lincolnshire Council (1999) North Lincolnshire Landscape Character Assessment & Guidelines[1]	1999	Published Landscape Character Assessment for North Lincolnshire (North Lincolnshire Council, 1999). The document assesses the special character, distinctiveness and qualities of the North Lincolnshire landscape.
Ordnance Survey (OS) Maps 1:10000, 1:25000 and 1:50000	2021	Background mapping to assist with baseline reporting.
Terrain data used for ZTVs.	2021	Data to inform the generation of the ZTV, illustrating areas from where the Project may be visible in the Visual Study Area.

6.1.2.2 As described above, the Visual Study Area of the assessment has been defined, in part by the computer generated ZTV of the Project and is a tool for understanding where visual effects may occur. The ZTV has been established through the use of a LiDAR Digital Surface Model with 1-metre resolution and is based on the maximum theoretical visibility of the Project, derived from the maximum height of the proposed 120 m high ERF stack. The output has been produced using ESRI ArcGIS Spatial Analyst and is

presented in Figure 3**.** The data are representative of a viewer height of 2.0 m.

6.1.2.3 Buildings and woodland were added indicatively to the digital terrain model to give an impression of the likely screening of views, though not all screening is identified, and the ZTV does not consider smaller structures, individual trees or hedges. The ZTV was used to identify potential receptors within the Landscape and Visual Study Areas and is shown in Figure 3. Receptors which fall outside the ZTV would not be affected by the Project and are not considered further in the assessment.

6.1.3 Site visit

6.1.3.1 Field survey work was carried out to provide background knowledge on the existing character of the landscape and record views from representative viewpoints. The photography provides a baseline summary of the existing views from publicly accessible locations within the Visual Study Area. This was undertaken in April 2021 with trees devoid of leaf cover to ensure minimal screening from deciduous vegetation and represents the 'worst-case' scenario. GLVIA3 guidance suggests that consideration be given to seasonal variation in effects where appropriate but acknowledges that the timing of assessments may dictate that this is not practical. In this assessment, differences between seasonal views have been indicated and taken into consideration in reaching conclusions.

6.1.3.2 The site visit was undertaken in good visibility and records made in the form of field notes and digital photographs. Photographs included in the figures are stitched panoramas composed from individual frames taken in accordance with good practice guidance set out in *Technical Guidance Note 06/19 Visual Representation of Development Proposals* (Landscape Institute, 2019).

6.2 Landscape Baseline

6.2.1.1 This section provides a description of the 2.5 km Landscape Study Area and sets out the landscape baseline against which the Project is assessed.

6.2.2 Landscape Character

6.2.2.1 The use of landscape characterisation as part of landscape assessment is a widely accepted tool, defined at both national and local levels.

Published Landscape Character Areas – National

6.2.2.2 Mapping and written descriptions published by Natural England classify the landscape character of England into 159 distinct National Character Areas (NCAs). These NCAs provide a broad landscape context in which to assess the impact of individual development proposals and aim to assist decision makers to consider how best to enhance and respect local distinctiveness.

6.2.2.3 At a national scale, the western extent of the Landscape Study Area lies within NCA 39 Humberhead Levels 39. Stretching from a low ridge of Southern Magnesian Limestone in the west to the Yorkshire Wolds in the

east, the NCA encompasses towns such as Doncaster, Selby and Goole. The NCA is generally low-lying, with large-scale rectilinear agricultural fields forming the prevailing land use.

6.2.2.4 The eastern portion of the Landscape Study Area is defined as NCA 45: Northern Lincolnshire Edge with Coversands. The landscape is defined by a limestone scarp slope, forming a contrast to adjacent low-lying land to the west. The NCA exhibits a sense of openness, characterised by large agricultural fields bordered by hedgerows. Panoramic views are afforded from the summit of the scarp slope, forming locally elevated vantage points.

6.2.2.5 The published character descriptions of NCA 39: Humberhead Levels and NCA 45: Northern Lincolnshire Edge with Coversands are at a regional scale but set the context for more localised studies. The key characteristics of these NCAs are outlined below in Table 16.

Table 16: National Character Area

NCA	Key Characteristics	Relevant Statements of Environmental Opportunity
Humberhead Levels (39)	Flat, low-lying landform; Ecologically important lowland raised mires and lowland heath; Large-scale agricultural pattern, bordered by ditches; Flood plains associated with the lower stretches of several major rivers; Canalised rivers, dykes, pumping stations and canals, which support important wetland habitats; Waterlogged soils dominate, internationally import for archaeological and palaeo-archaeological deposits; and Vertical elements such as water towers and wind turbines are prominent within the long views and open skies.	SEO 4: Protect the open and expansive character of the landscape, its cultural features and sense of remoteness, by ensuring that new development is sensitively located, accommodates green infrastructure, retains long views, and makes a positive contribution to biodiversity. Additional opportunity 1: Plan for the improved enjoyment and understanding of the landscape and its subtle variations, its inspirational qualities, its biodiversity, geodiversity and historic interest, its role in producing food and mitigating climate change.
Northern Lincolnshire Edge with Coversands (45)	Elevated landform with limestone and iron stone cliffs aligned north-south, offering long views to the west; Infertile soils support heathland, acid grassland, oak and birch woodlands and rare species including the woodlark and grayling butterfly; Underlying limestone offers productive soils, supporting cultivation of crops, generally within extensive rectilinear fields with	SEO 3: Maintain the sense of place and the diversity of settlements and landscape features through expanding semi-natural habitats, managing the restoration of extraction sites, retaining the inspirational long views, ensuring that development is sustainable and well-integrated into the landscape, and providing more interpretation and access through good green infrastructure links

NCA	Key Characteristics	Relevant Statements of Environmental Opportunity
	clipped hedges or rubble limestone borders; Woodland cover is limited with patches of broadleaves and conifers in infertile sandy soils and occasional shelter belts; Long, straight roads and tracks between nucleated medieval settlements, often on higher land and villages with vernacular architecture and walling; Other development includes the major settlement of Scunthorpe and Lincoln; and Ground features on the plateau include prehistoric burial mounds, Roman artefacts and abandoned medieval villages.	SEO 4: Protect and manage sites and features of historic, geological and geomorphological interest, such as sand dune formations and rock exposures, Roman roads, stone walls and vernacular architecture, and Lincoln's historic centre, to strengthen sense of place and history, enhance biodiversity and improve understanding of how the landscape has developed over time.

Published Landscape Character Assessment – Local[1]

6.2.2.6 Adopted in 1999, NLC published the *North Lincolnshire Landscape Character Assessment & Guidelines* to deliver a characterisation of the landscape which assesses the special character, distinctiveness, and qualities of the area. The guidance is considered to be of value in a wider context, informing the identification of priorities for action as well as decision making relating to land use management.

6.2.2.7 The document provides a comprehensive assessment of the landscape, classifying the area into six Landscape Character Areas (LCAs) – of which two are present in the study area – which are refined further into Landscape Character Types (LCTs). The detailed descriptions of character form the baseline against which the potential impacts of the Project on landscape character have been assessed.

6.2.2.8 The western section of the Landscape Study Area lies within the Trent Levels LCA, characterised by the low-lying floodplain of the River Trent which runs broadly north-south throughout the landscape. Settlement within the LCA is relatively sparse, concentrated predominantly on the banks of the River Trent. The LCA is also typified by industrialisation and the proliferation of electricity transmission lines, associated with river wharf areas, Keadby 1 Power Station, wind turbines and Keadby 2 power station which is currently under construction. These features are visible from long distances in the open landscape and contribute an industrialising influence on the landscape. Of relevance to the Project, industrial growth along the Trent wharves (Gunness, Keadby, Grove Wharf, Neap House, Flixborough

[1] North Lincolnshire Council (1999) North Lincolnshire Landscape Character Assessment & Guidelines

and Burton upon Stather) is noted as a key pressure for change within the landscape.

6.2.2.9 Key characteristics of the Trent Levels LCA include:

- Essentially flat, open floodplain landscape with occasional rising ground and little vegetative cover.
- Large open field structure defined by well-maintained drainage ditches. Hedgerow planting helps to define boundary areas in places, however, hedges are generally badly maintained and gapped.
- Landscape offers expansive views with very little diversity in character. Woodland blocks, rising ground and settlements create distant enclosure.
- Open arable areas are occasionally punctured by small woodland copses, farmsteads, shelterbelts, overhead electricity pylons and well-treed settlements.
- Farming intensification has led to the loss of hedgerows in places and the consequential breakdown of field structure.
- The area is dominated by linear features, long narrow roads flanked by drainage ditches, rectilinear field patterns, shelterbelts, field drainage systems, overhead electricity pylon runs and some major transport corridors i.e. the M180 and railway.
- Larger settlements are found on higher ground or adjacent to the banks of the River Trent. The open floodplains are generally unpopulated with only small farmsteads and associated barns/sheds.
- The open floodplain areas illustrate the typical character of this landscape character area with tendencies for enclosure and a more intimate landscape to occur around settlements.

6.2.2.10 Land defined as Trent Levels LCA within the Landscape Study Area is further subdivided into the following LCTs:

- Flat Drained Farmland LCT – Althorpe, Amcotts, East and West Butterwick and Owston Ferry; and
- Industrial Landscape LCT – Burringham, Gunness and Keadby.

6.2.2.11 The Trent Levels LCA is dominated by the Flat Drained Farmland and Flat Drained Treed Farmland LCTs, differentiated by slight changes in vegetation cover, land use and historical development. Located at Flixborough and Keadby, the Industrial Landscape LCT is characterised by prominent industrial visual detractors in the open floodplain area of the Landscape Study Area.

6.2.2.12 Land lying within the east of the Landscape Study Area is encompassed within the Lincolnshire Edge LCA, dominated by the built form of Scunthorpe, ironstone workings and transport corridors. The hinterland of the town is defined by industrial, commercial, and residential land use, providing a 'hard edge' to the urban fringe. The LCA forms a complex landscape, typified by elevated terrain associated with the wooded scarp

slopes and an openness of views. Outside of the built footprint of Scunthorpe, arable farmland forms the dominant land use.

6.2.2.13 Key characteristics of the Lincolnshire Edge LCA include:

- Large scale escarpment landscape, mainly arable, with two locally distinctive north-south scarp slopes.
- Complex landscape includes arable farmland, scarp slopes, urbanisation and dereliction in the Scunthorpe area, and the coversands area of heath, blown sand habitats and conifer woods
- Farmland characterised by open, rectilinear fields and few boundaries. Where enclosure is still present, a mixture of discontinuous hedgerows, shelter belts and trees.
- The historically significant Roman road, Ermine Street follows a north-south route, to the east of the area.

6.2.2.14 The Lincolnshire Edge LCA is further subdivided into the following LCTs:

- Elevated Wooded Farmland LCT – East of Burton upon Stather and Alkborough, North of Scawby and Appleby;
- Steep Wooded Scarp Slope LCT – West of Burton upon Stather and Alkborough; and
- Despoiled Landscape LCT – North East Scunthorpe and Lincoln Edge.

6.2.2.15 An openness of views combined with the dominance of arable farmland beyond the urban footprint of Scunthorpe form prevailing features of the Lincolnshire Edge LCA. Tracts of heathy woodland associated with coversands and vegetated scarp slopes also typify the area. The Elevated Wooded Farmland LCT encompasses swaths of the LCA and provides long distance views, albeit disrupted slightly due to the coverage of vegetation. The Steep Wooded Scarp Slope LCT provides local variation in topography whereas the Despoiled Landscape LCT occupies a broad area of former quarried landscape running northwards from the urban edge of Scunthorpe.

6.3 Landscape of the Energy Park Land and Study Area

6.3.1.1 The scheme-specific assessment below considers the Application Land and land lying within the Landscape Study Area, as defined in Figure 2. This section adds detail to the less specific assessments undertaken at a broader scale, including those published by Natural England and the landscape character assessment undertaken by NLC.

6.3.2 Topography

6.3.2.1 A low-lying landscape predominates with little level change evident across the Application Land itself, typically less than 10 m Above Ordnance Datum (AOD). Bordered by flood embankments, the channel of the River Trent and its floodplain forms a distinctive landscape feature of the wider Landscape Study Area. Land lying to the east is defined by the toe of the western north-south escarpment rising out of the Trent Valley lowlands and provides localised elevation.

6.3.3 Land Use

6.3.3.1 Characterised by a large-scale field structure, the western portion of the Landscape Study Area is characterised by arable land use interspersed by small woodland copses. Linear tracts of vegetation are evident at Burton Wood and immediately west of Foxhills Industrial Park at Foxhills Plantation. Current and former industrial activity at the northeastern edge of Scunthorpe is evidenced by a degraded landscape context to the southeast of the Landscape Study Area. Similarly, the effects of agricultural intensification, including the loss of some hedgerow field boundaries, has resulted in the loss of landscape structure within the wider landscape.

6.3.3.2 Field patterns are generally large-scale and defined by either well-maintained drainage ditches or hedgerow field boundaries. A network of drainage channels cross the agricultural landscape, draining into the meandering River Trent. The linearity of these modern agricultural features are further emphasised by the presence of electricity transmission lines and major infrastructure corridors, constructed on flood embankments within the wider landscape.

6.3.3.3 Industrialisation is evident at Flixborough Port and Grove Wharf, typified by industry and cranes associated with the river wharf areas. The six wind turbines at Grange Wind Farm occupy land to the north of Flixborough Industrial Estate itself. Radiating from Keadby 1 Power Station, a network of electricity transmission lines also provides vertical features at the southern and western extents of the Landscape Study Area.

6.3.4 Settlement

6.3.4.1 The northwest edge of Scunthorpe is the largest area of residential land use within the Landscape Study Area. Situated to the south of the A1077 corridor, the residential built form is characterised by a predominantly suburban context, typified by modern semi-detached / detached developments set out in a cul-de-sac arrangement.

6.3.4.2 The flat low-lying nature of the topography often results in the heightened visual presence of settlements in the wider landscape, protruding above the horizon. Other settlements within the Landscape Study Area include Amcotts, lying on the western banks of the River Trent, and Flixborough, adjoining the Order Limits on higher ground to the northeast. Both settlements are characterised by vernacular buildings which combine the use of red brick with either slate or clay pantile roof tiles. Although generally in keeping with the traditional building styles, more recent development has elongated the nucleated settlement form of these settlements.

6.3.5 Communications

6.3.5.1 The carriageway of the A1077 crosses the southern portion of the Landscape Study Area, connecting the northern fringes of Scunthorpe with the corridor of the M181. A network of local roads also provides local connections within the wider landscape. The village of Amcotts is centred on the route of the B1392, running broadly parallel with the meandering course of the River Trent. The carriageway of the B1216 radiates from

Gunness, linking to the northwestern extent of Scunthorpe via Grove Wharf.

6.3.5.2 The channel of the River Trent bisects the wider landscape of the Landscape Study Area, providing wider linkages to the Humber Estuary and the North Sea.

6.3.6 Landscape Value

6.3.6.1 The Application Land does not lie within any area designated in terms of specific national statutory landscape designation or any local designation defined by NLC.

6.3.6.2 Conservation Areas, whilst not specific landscape designations, reflect landscape and architectural quality and are relevant to development proposals which may affect them. Whilst not encompassed within the Order Limits itself, the Landscape Study Area lies within close proximity to Normanby Conservation Area. Comprised of a small estate village associated with the house and grounds of Normanby Hall, the Conservation Area is located on the dip slope of the western escarpment of the Lincolnshire edge.

6.3.6.3 Assessment of landscape value is therefore based on the indicative criteria noted in Section 5.2. The value attached to landscape receptors is assessed individually, and this is set out in the assessment of effects in Section 8.

6.4 Visual Baseline

6.4.1.1 This section identifies the extent of possible visibility of the Project and the visual receptors across the Visual Study Area. It also introduces the viewpoints that will be used to assess effects on receptors, including reasons for their selection.

6.4.2 ZTV Analysis

6.4.2.1 The limited topographical variation within the Visual Study Area results in the theoretical visibility of the Project (based on a stack height for the ERF of 120 m above finished ground level (126.6 m AOD)) from large swaths of the Visual Study Area.

6.4.2.2 The ZTV output indicates that the characteristic open landscape of the Visual Study Area would also afford some long-range views towards the Project. This is largely evident within the western portion of the Visual Study Area as well as land lying within close proximity of the River Trent. Vegetation and built form within Scunthorpe will screen views of the Project, restricting the availability of views to the east and southeast. Localised screening is also provided by the undulating topography associated with the ironstone and limestone scarps.

6.4.2.3 Located within the wider landscape, widespread visibility is offered towards the Application Land from the corridors of the A161 in the west and A18 to the southwest. However, a more intermittent pattern of visibility is offered by the A1077 to the east.

6.4.3 Views from Local Communities

6.4.3.1 The residential receptors closest to the Application Land are within the villages of Amcotts and Flixborough. Occupying the western banks of the River Trent, Amcotts lies approximately 200m from the Order Limits and offers filtered views to the east through a belt of vegetation bordering the river. Views from this location are characterised by the existing land use at Flixborough Industrial Estate and Flixborough Port. Lying in the west on higher ground, Flixborough village abuts the Railway Reinstatement Land to the southwest. The buildings screen some direct views towards the Application Land from the village itself. Built development at Flixborough Industrial Estate is apparent in the view from Stather Road, backgrounded by Keadby Grange Wind Farm.

6.4.3.2 Connected by the corridor of the B1430, the villages of Burton-upon-Stather and Normanby offer pockets of visibility towards the Application Land, albeit limited by the wooded ridgeline at Burton Wood. The Project would also be theoretically visible from Scunthorpe. However, the extent of built form dictates that views would largely be restricted to the northern and north easterly limits of the town. In addition, the screening effect of the engineered embankment accommodating the South Humberside Rail Line precludes the availability of some views within Scunthorpe itself.

6.4.3.3 Views of the Project would be theoretically visible from the villages of Adlingfleet and Garthorpe, lying to the northwest of the Visual Study Area. However, views from these locations are limited due to the combination of low-lying topography, intervening vegetation and viewing distance. Pockets of visibility would also be potentially afforded from settlements such as Keadby, Althorpe and Burringham which lie within close proximity to the banks of the River Trent. The existing outlook to the northeast from these settlements is typified by built development at Grove Wharf and Flixborough Industrial Estate, in addition to wider views towards the turbines at Grange Wind Farm.

6.4.3.4 The ZTV output indicates expanses of visibility to the west of the Visual Study Area within land use characterised by arable farmland. However, the sparsely populated nature of this area determines that visibility would be limited largely to the local communities at Luddington and Eastoft, small hamlets and isolated farmsteads. Views from Dragonby, High Risby, and Low Risby are sufficiently distant or screened such that these communities have been scoped out of further consideration in the LVIA.

6.4.4 Views from PRoW

6.4.4.1 The flat nature of the local topography and limited tree cover of the wider Visual Study Area results in an open character, with the availability of long views across the open arable fields. The network of PRoW within the Visual Study Area primarily follows the patterns of field boundaries and drainage ditches, particularly in the west. Although there are no promoted long-distance footpaths within the Visual Study Area, recreational users of the local PRoW network form key receptors.

6.4.4.2 Offering broadly north-south linkages between Flixborough and Burton upon Stather / Normanby, views of the Project would be potentially

afforded from Public Footpath 165 and Bridleway 304. Providing wider connections to the south towards Scunthorpe, Public Footpaths 175, 176, 177 and 178 would also potentially provide close range vantage points. However, the lack of an extensive local network of PRoW dictates that many open areas with potential visibility of the area are less formally used by the public. Despite the screening effect of vegetation associated with the River Trent, the permissive path (Tiddy Mun Trail) situated on the western bank would potentially afford some close-range views of the Project.

6.4.5 Views from Roads

6.4.5.1 Direct views are principally obtained, fully or partially from roads bordering the Application Land, including Lodge Lane, Stather Road and the B1216 Ferry Road West. Filtered views are also available from Burton Road, Normanby Road and the B1430 Main Street to the northwest of the Visual Study Area. Users of these routes currently experience existing views of industrial land use at Flixborough Industrial Estate as well as built form at the northern limits of Scunthorpe. Except for the corridor of the A161, the road network within the western portion of the Visual Study Area is comprised of minor roads. Views from these routes are currently characterised by agricultural land and the presence of wind energy development at Keadby Grange, Grange and Twin Rivers.

6.4.5.2 The ZTV indicates the potential availability of views towards the Project from the A1077. The nature of the undulating landform to the east of the Visual Study Area also results in the availability of pockets of wider visibility along the route of the A1077, connecting Winterton to the northern fringes of Scunthorpe. Potential transport receptors also include users of the A18 which connects Scunthorpe with Althorpe, lying to the west of the River Trent.

6.4.6 Selection of Viewpoints for Assessment

6.4.6.1 This section sets out the viewpoints that have been used to represent and assess the visual effects of the Project on the visual receptors described above. The viewpoint list is a representative selection of locations as agreed with NLC; it is not an exhaustive list of locations from which the development will be visible. 11 viewpoints were selected through desk study, site work, and discussions with NLC. These viewpoints are all publicly accessible and provide representative views of different types of receptors.

6.4.6.2 The representative viewpoints and visualisations used to assess the visual effects are listed below in Table 17, with their locations shown in Figure 3. Supporting visualisations have been produced for all viewpoints as indicated below.

Table 17: Viewpoint Locations

VP no.	Viewpoint Name	Grid Reference	Justification for selection
1	Trent Side, Amcotts	485682, 414190	Main street in nearest village, with views towards the Application Land

VP no.	Viewpoint Name	Grid Reference	Justification for selection
2	Stather Road, Flixborough	486915, 414848	Open location at edge of nearby village, overlooking the Application Land
3	Footpath at Grange Wind Farm	486452, 415782	Public footpath north of Flixborough Industrial Estate
4	A1077, Scunthorpe	486922, 412757	Open views towards the Application Land from the edge of Scunthorpe
5	Keadby	483569, 411968	Accessible flood embankment at the centre of the village, overlooking the River Trent
6	Outgate, Ealand	479450, 412215	Availability of long-distance views across open farmland near the village
7	Ox Pasture Lane, Luddington	483424, 416383	Road at the southeastern edge of the village, with views across the River Trent to the Application Land
8	Luddington Road, Garthorpe	484485, 418834	Lane at the southeastern edge of the village with views across the River Trent to the Application Land
9	Stather Road, Burton Stather	486736, 418120	Slightly elevated location on the main road out of the village, with views looking south towards the Application Land
10	A1077 near Dragonby	490904, 414549	Elevated location on main road with views looking west towards the Application Land
11	Public footpath at Phoenix Local Nature Reserve	487670, 414315	Viewpoint requested by NLC. The view is representative of users of the local PRoW network

6.5 Approach to visualisations

6.5.1.1 Baseline photography was recorded for all 11 representative viewpoints listed in Table 17**.** Photomontages have been produced to illustrate the scale and massing of the Project for the five representative viewpoints located within 2.5 km of the Energy Park Land (Viewpoints 1, 2, 3, 4 and 11). The photomontages show the parameters model, in order to depict the largest scale of buildings that will potentially be built. The parameters model is based on the maximum footprint dimensions and maximum heights for all project elements, as set out in Chapter 3, including an ERF stack of 120m height above finished ground level. The actual size and appearance of the structures may be different when built but will be no larger than shown in the photomontages. Similarly, details of finishes or colours are not indicated as these are yet to be determined. Photomontages have been prepared, showing the illustrative model immediately following completion (year 1) and at year 15 following completion to show the effect of maturing mitigation planting. The depiction of landscape mitigation is similarly illustrative.

6.5.1.2 A simple ‘block visualisation’ has been prepared in Viewpoints 5, 6, 7, 8, 9 and 10, showing the scale and location of the parameters model in the view. No illustrative mitigation is included in these longer-distance views.

6.5.1.3 All baseline photography, block visualisations and photomontages are included in Figures 5 to 15.

7. MITIGATION

7.1.1.1 This section describes the mitigation measures considered in the assessment to date as reported in this ES. This includes mitigation that is integral to the design of the Project and good practice mitigation measures that the Project is committed to adopting.

7.1.1.2 The following primary mitigation measures are incorporated into the siting and design of the Project, and will be secured by means of the approved Project details within the DCO:

- direct impacts on landscape features have been avoided through the siting of the Project within an area that is partly brownfield land, with few trees, hedgerows or other valued landscape features to be affected;
- buildings within the Project have been grouped so that they relate primarily to the existing commercial and industrial land uses at Flixborough Industrial Estate;
- the railway reinstatement will take place entirely within the existing footprint of the existing railway line, reducing the impact on the landscape;
- parameters of buildings and structures have been designed to be the minimum size reasonable to ensure that construction of the Project is feasible; and
- the Indicative Lighting Strategy (see Annex 4 to the ES, **Document Reference 6.3.4**) has been developed to minimise impacts on night-time views from the surrounding landscape.

7.1.1.3 During construction, works will be undertaken in line with a Construction Environmental Management Plan (CEMP) which will include good practice measures to reduce impacts on sensitive landscape features and visual receptors. The CEMP will be produced by the construction contractor in accordance with the Code of Construction Practice (CoCP) provided in Annex 7 to the ES (**Document Reference 6.3.7**).

7.1.1.4 Indicative Landscape and Biodiversity Plans (**Document Reference 4.10**) have been developed that incorporates measures to integrate the Project into the receiving landscape. The Indicative Landscape and Biodiversity Plans have been developed alongside the LVIA and include specific responses to identified impacts.

7.1.1.5 The following mitigation commitments are set out in the Indicative Landscape and Biodiversity Plans **(Document Reference 4.10)** and will be further developed and secured through a Landscaping Scheme as required by the draft DCO (**Document Reference 2.1**):

- introduction of pockets and strips of woodland planting, including both formal and natural planting, at strategic locations at the perimeter of proposed buildings to soften the impact of the Project and to integrate built form into the landscape;

- extension of the distinctive linear woodland (Burton Wood) located on the scarp slope to provide a wider connection and strategic belt of green infrastructure, linking with the corridor provided by the Railway Reinstatement Land, and screening views from Flixborough;
- extension of this woodland west along the railway line, to form an enhanced green link around the north edge of Flixborough Industrial Estate and to provide visual screening to the ERF;
- creation of a wetland area extending north to south along the west side of the Project, providing a flood mitigation function and to enhance local landscape quality and recreational opportunities;
- creation of areas of grassland to the east of the battery storage and west of the AGI, to enhance local landscape quality and biodiversity;
- introduction of pockets of vegetation along the corridors of the A1077 to filter views of the Project, whilst allowing some long distance views across the low-lying landscape;
- reinstatement of hedgerow along Ferry Road West and planting around the Energy Park Land entrance, to create a landscape gateway and provide links between new woodland areas;
- creation of more formal landscape planting along the new access road, around the buildings, and along the railway terminal, to assist integration of the buildings into the arable landscape pattern;
- introduction of public access and green links through the Energy Park Land, connecting the river and the Local Nature Reserve to increase recreational value; and
- planting of woodland strips parallel to the railway reinstatement land to retain the perception of a continuously wooded corridor, providing linkage between existing woodlands, and reinforcing visual screening along Stather Road at Flixborough village.

7.1.1.6 A Landscape and Biodiversity Management and Monitoring Plan (LBMMP) will be prepared for the Project. This will include details of the creation, enhancement and ongoing management of habitats, including woodland, hedgerow and other landscape features. An Outline LBMMP has been prepared and forms part of the DCO (**Document Reference 5.7**).

7.1.1.7 The introduction of woodland screening along the western side of the ERF was explored, to mitigate effects on views from Amcotts. However, due to the position of the railhead and Wharf in this location, there is very little space in which to deliver meaningful planting. Some landscape planting has been included along the western side of the railhead, which was moved further east where possible to allow a 10m woodland strip, however this does not extend north to the ERF. As a result of the nature conservation designations that apply to the river corridor, and the functional nature of the flood banks, it was not feasible to introduce planting along the riverside without objection from statutory bodies. Consideration was also given to introducing screen planting on the west side of the river, close to Amcotts. However, this land is not within the control of the Applicant, and

planting on the flood bank would conflict with guidance from the Environment Agency.

7.1.1.8 Further consideration of the architectural design will be required at detail design stage, to reduce the effects of the Project at Viewpoint 1. In particular, the following steps will assist:

- using variation in roof heights and massing to visually break up the bulk of the ERF building;
- use of colour, for example a light colour on the roof or upper storey, with darker colours restricted to the lower storeys (although application of distinct 'banding' is unlikely to be effective at this distance, and may simply draw more attention to the building);
- limit the extent of exposed building infrastructure (pipes, external tanks etc.) by integrating these elements, or alternatively by screening or wrapping of larger external cylinders to ensure a more ordered appearance and reduce visibility of any external lighting; and
- a substantive visual barrier installed along the railhead edge or along the development platform of the ERF would provide screening of ground level storage and activity such as loading bays and vehicle movements. This would need to be a visually impermeable barrier of at least 3 m in height and could be coloured or textured to reflect the river edge.

7.1.1.9 More generally, the following measures will assist in further reducing the effects of the Project on landscape and visual amenity:

- consideration of the architectural response to ensure the detail of the Project, including form, material, colour and finishes, is integrated within the landscape to reduce landscape and visual effects; and
- limiting the overall height and dimensions of the buildings and the stacks (ERF stack especially), where feasible to do so, to reduce their impact on the landscape and views compared to the maximum scenario assessed in the LVIA.

7.1.1.10 These additional measures are incorporated into the Design Principles and Codes (**Document Reference 5.12**) that forms part of the DCO. This document will guide the detailed design of the Project so that it meets the intention of these additional mitigation measures as far as reasonably practicable.

7.1.1.11 Indicative Elevation drawings (**Document Reference 4.12**) have been developed in order to demonstrate these design principles. This depicts how the Project may eventually be built, and illustrates how residual impacts may be further reduced. Visualisations of the illustrative design have been prepared for Viewpoint 1 Amcotts, Viewpoint 2 Flixborough and Viewpoint 11 Footpath at Phoenix LNR. These visualisations are included in Appendix B and are provided for information only. These illustrative views do not form the basis for the LVIA, which is informed by the parameter model shown in Figures 5 to 15.

7.1.1.12 Landscape mitigation planting within the Project would be partially mature by year 15 and would contribute to a reduction in effects on character and views arising from the buildings and infrastructure. This LVIA accounts for the incremental growth of this planting through the assessment of the effects of the operational Project at years 1 and 15 following completion of the Energy Park Land as a whole. The Project will be built out over a six-year period, and it is assumed that planting will be established across this time frame, so that some planting will be more mature by year 15.

8. ASSESSMENT OF LIKELY EFFECTS

8.1 Assessment of Landscape Effects

8.1.1.1 This section sets out the assessment of the predicted landscape effects that will occur during the construction and operational phases of the Project.

8.1.1.2 NCA 39 Humberhead Levels and NCA 45: Northern Lincolnshire Edge with Coversands which encompass the Application Land are of regional scale and incorporate such varied landscape components that any changes at the scale of the Application Land would not notably affect its overall character. The NCAs are assessed as being of low sensitivity to the Project due to the factors listed below:

- the extensive nature of the NCAs renders them of low susceptibility to a localised change;
- the scale of the Project in comparison with the geographical coverage of the NCA;
- the limited loss of characteristic landscape features; and
- absence of any landscape designations of value within the Application Land.

8.1.1.3 For the purposes of this assessment, the effects of the Project will be assessed in relation to the following landscape receptors:

- Landscape of the Application Land;
- Flat Drained Farmland LCT and Industrial Landscape LCT (Trent Levels LCA); and
- Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT (Lincolnshire Edge LCA).

8.1.1.4 The assessment of landscape effects arising from the Project on these LCTs has formed part of the assessment.

8.1.1.5 The assessments of likely landscape effects on the landscape receptors identified above within the construction and operational phases are set out in Table 18 to Table 23 below.

Table 18: Landscape assessment of the Application Land during construction – direct effects

Nature of receptor (sensitivity)
Susceptibility Although construction activity is not a current feature of the Application Land, cranes form an existing feature of Flixborough Wharf. Portions of the Application Land are therefore often typified by a changing character due to Site activities. Existing industrial land use, the transport corridor of the A1077 and the disused railway form urbanising features in the landscape. The combination of these urban influences, low-lying landform and low scenic quality determines that the Application Land has some ability to accommodate the Project, with an overall **medium** susceptibility.
Landscape Value

The Energy Park Land is currently agricultural, with existing industrial buildings at Flixborough Industrial Estate. The landscape character of the Application Land is influenced by the surrounding industrial development, urban conurbation and intensive agriculture. The Application Land has few valued landscape features and recreational opportunities are limited to a short section of PRoW from Stather Road to the disused railway. Landscape value is judged to be **low.** Overall sensitivity is judged to be medium.
Nature of effect (magnitude)
Size / scale of effect Given the scale of the Project, adverse effects on landscape character would arise from the presence of construction activity. This would result in the addition of new elements which would alter the perceptual character of the Application Land. The scale of landscape change is judged to be **large.**
Geographical extent affected The extent of construction activity would represent a widespread change in character and land use at the scale of the Application Land.
Duration / reversibility Unlike at operation, construction effects will be both reversible and of short term duration of effect (approximately six years in duration). Overall magnitude is judged to be large.
Level of effect
Overall, the level of effect is judged to be **major adverse** on the landscape of the Application Land at construction.

Table 19: Landscape assessment of the Application Land during operation – direct effects

Nature of receptor (sensitivity)
Susceptibility Post construction, built development would form the primary land use within the Energy Park Land, with human influence also evident within the wider Application Land. The landscape receptor is partly able to accommodate the Project without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape offer some opportunities for accommodating the change without key characteristics being fundamentally altered. The Application Land is assessed as being of **medium** susceptibility to the Project.
Landscape Value Low – see Table 18 Overall sensitivity is judged to be medium.
Nature of effect (magnitude)
Size / scale of effect Built form would occupy sections of the Energy Park Land and represent a change in character and land use at the scale of the Application Land, albeit in a context of existing industrial land use and urban edge location. The scale of landscape change is judged to be **medium**. Landscape infrastructure, including woodland planting, would be partially mature by year 15 and contribute to a reduction in effects on character from the built form. Landscape treatment would assist in integrating the development into the landscape, though it would remain a permanent irreversible change to the baseline landscape character. The scale of landscape change at year 15 is judged to be **low.**
Geographical extent affected

Due to the scale of the Project, the geographical extent of the landscape change would be widespread.
Duration / reversibility Changes to landscape character would be considered to be **long term** and **not reversible.** Overall magnitude is judged to be medium at year 1 and low at year 15.
Level of effect
Level of effect Year 1: Overall, the level of effect is judged to be **moderate adverse** on the landscape of the application Site at year 1. Year 15: Overall, the level of effect is judged to be **minor adverse** on the landscape of the application Site at year 15, reflecting the maturation of proposed landscape planting.

8.1.1.6 The assessment of likely landscape effects on the Flat Drained Farmland LCT and Industrial Landscape LCT (Trent Levels LCA) within the construction and operational phases are set out in Table 20 and

8.1.1.7 Table 21 below.

Table 20: Landscape assessment of the Flat Drained Farmland LCT and Industrial Landscape LCT (Trent Levels LCA) during construction – direct effects

Nature of receptor (sensitivity)
Susceptibility Adverse effects would be derived from the presence of construction activity and the introduction of construction machinery into a landscape where areas of existing industrial and wharf side development form an existing feature. These riverside industrial areas currently provide an abrupt transition from the open agricultural landscape. As a consequence, these attributes offer some opportunities for accommodating the change without fundamental alterations to key characteristics. Susceptibility is therefore judged to be **medium.**
Landscape Value The landscape of Flat Drained Farmland LCT and Industrial Landscape LCT contain a mixture of land uses with no designations relating to scenic quality or landscape value. The character of the area is influenced by a number of urban, industrial, and intensive farming features. As a consequence, the landscape is perceived as a mix of urban and rural features with limited sense of tranquillity or remoteness within the area, mostly as a result of the urban fringes and industrial character. The overall landscape value of the LCTs is judged to be **low.** Overall sensitivity is judged to be medium.
Nature of effect (magnitude)
Size / scale of effect The Application Land makes a limited contribution to the wider landscape of the Flat Drained Farmland LCT and Industrial Landscape LCT. However, the construction phase would affect landscape character, tranquillity and value/quality of the LCTs. Adverse effects on landscape character would arise from the presence of construction machinery as an incongruous element. This would result in an increase in perceived industrial character, albeit limited in extent. Effects would be of medium scale in relation to the scale of the LCTs and the Project would result in the limited loss of characteristic landscape features.
Geographical extent affected

Due to the scale of the Project, the geographical extent of the landscape change would be widespread.
Duration / reversibility Construction will occur over a relatively **short term** period and be **reversible** in nature. Overall magnitude is judged to be medium.
Level of effect
Overall, the level of effect is judged to be **moderate adverse** on the landscape of Flat Drained Farmland LCT and Industrial Landscape LCT at construction.

Table 21: Landscape assessment of the Flat Drained Farmland LCT and Industrial Landscape LCT (Trent Levels LCA) during operation – direct effects

Nature of receptor (sensitivity)
Susceptibility The Project would involve the introduction of built form within a landscape partly characterised by features of an industrial character. The landscape receptor is partly able to accommodate the Project without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape offer some opportunities for accommodating the change without key characteristics being fundamentally altered. The Application Land is assessed as being of **medium** susceptibility to the Project.
Landscape Value Low – see Table 20. Overall sensitivity is judged to be medium.
Nature of effect (magnitude)
Size / scale of effect The Project would extend over both LCTs. Although the Project would result in only a small change to landscape characteristics, the new features would be of a larger scale than the existing built context. The introduction of landscape mitigation elements would assist with reducing the effects of the Project at year 15, by integrating the new development into the landscape. The scale of landscape change at year 15 is therefore judged to be low.
Geographical extent affected Due to the scale of the Project, the geographical extent of the landscape change would be widespread.
Duration / reversibility Changes to landscape character would be considered long term and not reversible. Overall magnitude is judged to be medium at year 1 and low at year 15.
Level of effect
Year 1 Overall, the level of effect is judged to be **moderate adverse** on the landscape of Flat Drained Farmland LCT and Industrial Landscape LCT at year 1. Year 15 Overall, the level of effect is judged to be **minor adverse** on the landscape of Flat Drained Farmland LCT and Industrial Landscape LCT at year 15 due to the landscape integration provided by the maturation of landscape mitigation.

8.1.1.8 The assessment of likely landscape effects on the Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT (Lincolnshire Edge LCA) during the construction and operational phases are set out in Table 22 and

8.1.1.9 Table 23 below.

Table 22: Landscape assessment of the Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT (Lincolnshire Edge LCA) during construction – direct effects

Nature of receptor (sensitivity)
Susceptibility Adverse effects would be derived from visibility of construction activity and the introduction of construction machinery into an intimate scale landscape provided by the wooded scarp. However, the presence of degraded land and visually intrusive features indicate that the landscape offers some opportunities for accommodating the change without fundamental alterations to key characteristics. Susceptibility is therefore judged to be medium.
Landscape Value The LCTs contain a mixture of land uses and the landscape is not designated, either nationally or locally. However, a network of PRoWs in the landscape are valued by local communities. The overall landscape value of the LCTs is judged to be low. Overall sensitivity is judged to be medium.
Nature of effect (magnitude)
Size / scale of effect The Application Land makes a limited contribution to the wider landscape of the Steep Wooded Scarp Slope LCT and Despoiled Landscape LCTs. However, the construction phase would affect landscape character, tranquillity and value/quality of the LCTs. Adverse effects on landscape character would arise from the presence of construction machinery as an incongruous element. This would result in an increase in perceived industrial character, albeit limited in extent. Effects would be of medium scale in relation to the scale of the LCTs and the Project would result in the limited loss of characteristic landscape features.
Geographical extent affected Construction activity related to the Project would only affect a very small part of the wider study area, resulting in a scale and extent of perceived change within these LCAs of localised nature.
Duration / reversibility Construction will occur over a relatively short term period and be reversible in nature. Overall magnitude is judged to be medium.
Level of effect
Overall, the level of effect at construction is judged to be moderate adverse on the landscape of Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT at construction.

Table 23: Landscape assessment of the Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT (Lincolnshire Edge LCA) during operation – direct effects

Nature of receptor (sensitivity)
Susceptibility The landscape receptor is partly able to accommodate the Project without undue negative consequences to the baseline situation. Attributes that make up the character of the landscape

offer some opportunities for accommodating the change without key characteristics being fundamentally altered. The LCTs are assessed as being of **medium** susceptibility to the Project.
Landscape Value Features within the LCT are not formally designated and are therefore valued at a community level, resulting in **low** landscape value. Overall sensitivity is judged to be medium.
Nature of effect (magnitude)
Size / scale of effect Built form associated with the Project would result in a change in the landscape character of these LCTs. Direct landscape effects on these LCTs would be localised in spatial extent. The existing built form of Flixborough Industrial Estate indicates that the Project would not be incongruous within the existing landscape setting. The scale of landscape change is judged to be medium. The introduction of landscape mitigation elements would assist with reducing the effects of the Project at year 15, helping to integrate buildings and infrastructure into the landscape, and reducing the scale of change to low.
Geographical extent affected Due to the scale of the Project, the geographical extent of the landscape change would be widespread.
Duration / reversibility Changes to landscape character would be considered long term and not reversible. Overall magnitude is judged to be medium at year 1 and low at year 15.
Level of effect
Year 1 Overall, the level of effect is judged to be moderate adverse on the landscape of Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT at year 1. Year 15 Overall, the level of effect is judged to be minor adverse on the landscape of Steep Wooded Scarp Slope LCT and Despoiled Landscape LCT at year 15 due to the landscape integration provided by the maturation of landscape mitigation.

8.1.2 Summary of Landscape Effects

8.1.2.1 A summary of the residual effects on landscape character during construction and operation is provided in Table 24 below:

Table 24: Summary of landscape effects

Landscape receptor	Effect during construction	Effect during operation (year 1)	Effect during operation (year 15)
Land within in the Order Limits	Major adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)
Flat Drained Farmland LCT and Industrial Landscape LCT (Trent Levels LCA)	Moderate adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)
Steep Wooded Scarp Slope LCT and Despoiled Landscape	Moderate adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)

Landscape receptor	Effect during construction	Effect during operation (year 1)	Effect during operation (year 15)
LCT (Lincolnshire Edge LCA)			

8.2 Assessment of Visual Effects

8.2.1.1 Changes in views may give rise to adverse or beneficial visual effects through obstruction in views, alteration of the components of the view, and through the opening of new views by the removal of landscape elements. Changes in visual amenity relate to effects arising from temporary visibility of construction activity and the permanent views of buildings and other elements of the Project. Potential visual effects have been identified with reference to interactions between the Project and visual receptors. Effects may arise from the factors listed below.

8.2.2 Construction effects

- Visibility of temporary on-site construction activities, including ground disturbance, stockpiles, compounds, fencing, cranes and large machinery, as well as partially completed structures.

8.2.3 Operational effects

- Visual effects arising from the visibility of elements of the Project, including buildings, structures, roads, lighting, vehicle movements and, on colder days, a visible plume above the ERF stack;
- Visibility of screening derived from vegetation forming part of the landscape mitigation works.

8.2.3.1 An indication of differences between seasonal views is included within this visual assessment where appropriate. The effect of maturation of mitigation planting as part of the Project is also indicated for applicable viewpoints. Where a viewpoint has multiple receptor types, the most sensitive receptor has taken precedence within the visual assessment.

8.2.3.2 This section sets out the assessment of the significance of the predicted visual effects that will arise because of construction activity and the operational scheme. The extent to which the Project would give rise to change in the baseline views during construction and operation has been considered in relation to the representative viewpoints as set out in Table 25 to Table 35 below.

Table 25: Viewpoint 1: Visual effects

Viewpoint 1: Trent Side, Amcotts		
Receptor type: Residential / recreational	**Direction of view: Northeast**	**Distance from Order Limits: 220m**
Description of baseline view: Located on the flood embankment bordering the River Trent, the view is representative of recreational and residential receptors within Amcotts village. The location offers northeasterly		

Viewpoint 1: Trent Side, Amcotts		
Receptor type: Residential / recreational	**Direction of view: Northeast**	**Distance from Order Limits: 220m**

views towards the wharf at Flixborough Industrial Estate, albeit filtered due to the belt of tree planting parallel to the watercourse. The rising wooded scarp is perceptible in the background, with glimpsed views of Flixborough village. The viewpoint is on the locally promoted Tiddy Mun Trail, centred on Amcotts village itself.

Sensitivity of view during construction and operation (year 1 and year 15)
Susceptibility of visual receptor
The receptors at this location are predominantly the local community within Amcotts, characterised by a high susceptibility to the Project.
Value of view
The view is low value as it is enclosed and not scenic, although it is likely to be valued by the local community.
Overall sensitivity is judged to be high.

Nature of effect (magnitude) during construction
Scale of effect
Cranes and machinery associated with the construction of the Project, including the railhead, would be viewed prominently in the foreground of the view and represent a high magnitude of change across a large section of the view across the river. The scale of visual change at the construction stage would be also influenced by the short-range nature of the view and the perceptible change in the view due to the existing port context. The scale of visual change would be large.
Geographical extent of view affected
The view would be experienced by relatively few people, limited to the local community on the edge of Amcotts.
Duration / reversibility
The change in the view would be short term in duration and reversible.
Overall magnitude is judged to be large.

Level of effect during construction
Overall, the level of effect is judged to be major adverse at Viewpoint 1 at construction.

Nature of effect (magnitude) during operation (year 1 and year 15)
Scale of effect
Despite the existing presence of built form at Flixborough Wharf in the baseline view, the Project would be larger in scale and form a perceptible change in view. The ERF and its stack would be the principal elements seen in this view, with the elevated walkway and RHTF also visible, and the railhead in the foreground. The size of visual change would be large at year 1. A small amount of mitigation planting is recommended on the west side of the proposal, which would help to break up the volume of the new buildings by year 15. However, this will not be seen in front of the ERF and would not mitigate the overall bulk of the new buildings, the appearance of lighting or the visible plume. The size of the visual change would remain large at year 15.
Geographical extent of view affected
The view would be experienced by relatively few people, limited to the local community on the edge of Amcotts, and users of the footpath.
Duration / reversibility
The change in the view is considered to be long term and not reversible.
Overall magnitude is judged to be large at year 1 and year 15.

Level of effect during operation (year 1 and year 15)
Year 1
Overall, the level of effect is judged to be major adverse at Viewpoint 1 at year 1.

Viewpoint 1: Trent Side, Amcotts		
Receptor type: Residential / recreational	**Direction of view: Northeast**	**Distance from Order Limits: 220m**
Year 15 Overall, the level of effect is judged to be major adverse at Viewpoint 1 at year 15.		

Table 26: Viewpoint 2: Visual effects

Viewpoint 2: Stather Road, Flixborough		
Receptor type: Transport / recreational users on the settlement edge	**Direction of view: Southwest**	**Distance from Order Limits: Within boundary**
Description of baseline view: Located at the junction of Stather Road and First Avenue, the view affords locally elevated open views across Flixborough Industrial Estate and the River Trent floodplain beyond. Low-lying agricultural land forms the dominant land use in the left-hand frame of the view, with the channel of the River Trent visible in the middle ground. Turbines at Keadby Grange Wind Farm and electricity transmission lines punctuate the skyline in the central frame. However, views looking northwest are foreshortened somewhat due to the rising topography.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor Receptor susceptibility is assessed as medium for road users at this viewpoint, and high for local residents using the road for recreation on the settlement edge. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		
Nature of effect (magnitude) during construction Scale of effect Construction activity would be prominent in fore and middle ground views, protruding above the existing built form of Flixborough Industrial Estate. The scale of anticipated visual change would extend across a wide section of the panorama, resulting in a large scale of effect. Geographical extent of view affected The receptors at this location would be transient in nature and the view would be experienced by relatively few people. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be large.		
Level of effect during construction Overall, the level of effect is judged to be major adverse at Viewpoint 2 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect Several elements of the Project would be visible in fore and middle-ground views, including the ERF and its stack, the RHTF/CBMF, and the PRF, all linked by the elevated walkway, and with the hydrogen and natural gas above ground installations in the foreground, . The scale of visual change would be large despite views of the existing context of Flixborough Industrial Estate. Views towards the sub-station would also be available in the immediate foreground. There would be a distinct change across a wide section of the panorama, including lighting across the development, and a visible plume on colder days. In the immediate foreground, woodland planting as part of the extension of Burton Wood would provide effective screening by year 15, although		

Viewpoint 2: Stather Road, Flixborough		
Receptor type: Transport / recreational users on the settlement edge	**Direction of view: Southwest**	**Distance from Order Limits: Within boundary**
the ERF stack may remain visible. Woodland would also screen longer views that are currently a feature of the outlook, though these views will remain available from nearby footpaths. The scale of change at year 15 would be medium. Geographical extent of view affected The receptors at this location would be transient in nature and the view would be experienced by relatively few people. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be large at year 1 and medium at year 15.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be major adverse at Viewpoint 2 at year 1. Year 15 Overall, the level of effect is judged to be moderate adverse at Viewpoint 2 at year 15.		

Table 27: Viewpoint 3: Visual effects

Viewpoint 3: Footpath at Grange Wind Farm		
Receptor type: Recreational	**Direction of view: Southwest**	**Distance from Order Limits: 700m**
Description of baseline view: Representative of recreational users of the PRoW network, the view provides open views across arable agricultural land in the immediate foreground. Characterised by a largely rural quality, vegetation bordering the disused railway forms a wooded backdrop. The tract of dense vegetation at Burton Wood frames the left-hand frame of the view, with existing built form at Flixborough Industrial Estate visible against the skyline. Turbines at Grange Wind Farm are prominent in the middle distance, with long range views also afforded to Keadby Grange Wind Farm in the background view.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor Recreational users at this location are of high susceptibility to visual intrusion from the Project. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		
Nature of effect (magnitude) during construction Scale of effect Construction activity associated with the Project would be visible on the horizon against the skyline. The loss of vegetation within the railway reinstatement land would partially open up views towards construction activity. As a consequence, views of the Project would be apparent within the left-hand frame of the panorama. This would constitute a medium change in the view. Geographical extent of view affected The receptors at this location would be transient in nature and the view would be experienced by relatively few people. Duration / reversibility The change in the view would be short term in duration and reversible.		

Viewpoint 3: Footpath at Grange Wind Farm		
Receptor type: Recreational	**Direction of view: Southwest**	**Distance from Order Limits: 700m**
Overall magnitude is judged to be medium.		
Level of effect at construction Overall, the level of effect is judged to be moderate adverse at Viewpoint 3 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect Only the ERF and its stack would be visible from this viewpoint. Despite the increased scale of the Project in comparison with the existing baseline at Flixborough Industrial Estate, the operational stage would constitute a minor component of the wider panorama. Railspur upgrade works would not be perceptible from this location, nor would lighting around the ERF. Given the long-distance nature of the view and the availability of the existing industrial context available in the baseline view, the scale of visual change is anticipated to be medium. The maturation of mitigation planting within the railway reinstatement land would filter low level views towards the Project by year 15, though the ERF stack and, on colder days, the plume would remain visible. The scale of change will reduce to small. Geographical extent of view affected The receptors at this location would be partially transient in nature and the view would be experienced by relatively few people. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be medium at year 1 and small at year 15.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be moderate adverse at Viewpoint 3 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 3 at year 15.		

Table 28: Viewpoint 4: Visual effects

Viewpoint 4: A1077, Scunthorpe		
Receptor type: Transport / residential	**Direction of view: North**	**Distance from Order Limits: Within boundary**
Description of baseline view: Located at the junction of the A1077 and the B1216, the view is representative of road users at the residential edge of Scunthorpe. Large-scale arable land dominates the fore and middle ground, which is crossed by a network of electricity pylons and electricity transmission lines. Built form at Flixborough Industrial Estate detracts from the rurality of the view. However, views are afforded to the rising wooded scarp in the background view.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor The receptors at this location are predominantly the local community within the northeastern fringes of Scunthorpe, characterised by a high susceptibility to the Project. Road users at this location would be afforded oblique views towards the Energy Park Land, broadly perpendicular to the direction of the view, and are of low susceptibility. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		

Viewpoint 4: A1077, Scunthorpe		
Receptor type: Transport / residential	**Direction of view: North**	**Distance from Order Limits: Within boundary**
Nature of effect (magnitude) during construction Scale of effect Views towards construction activity associated with the Project would be obtainable in fore and middle-ground views within the central frame of the panoramas. Construction activities would be in close proximity and affecting a substantial part of the view. Open views would be afforded into the Application Land due to gaps in the continuity of vegetation along the A1077. The scale of visual change at the construction change is judged to be medium, reflecting the close-range nature of Viewpoint 4. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Scunthorpe. Transient views would be offered from users of the A1077. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be medium.		
Level of effect during construction Overall, the level of effect is judged to be moderate adverse at Viewpoint 4 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The flood management area in the immediate foreground will remain in use for agriculture forming a minor change in the constituent features of the view. The southern group of buildings and lighting, including the EV and H_2 refuelling station and battery storage, would be visible in middle ground views, with the new access road behind. The larger buildings, including the PRF, RHTF/CBMF, and ERF and its stack, will be set back, though still appearing larger than the industrial estate buildings. The scale of visual change would therefore be medium, given the short-range vantage point. Once established, the landscape mitigation along the northern boundary of the A1770 would partially screen low level views towards the Project, while planting around both groups of buildings will further integrate them into the landscape. Although taller elements will remain visible, including the plume on colder days, the scale of change by year 15 will reduce to small. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Scunthorpe. Transient views would be offered from users of the A1077. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be medium at year 1 and small at year 15.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be moderate adverse at Viewpoint 4 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 4 at year 15.		

Table 29: Viewpoint 5: Visual effects

Viewpoint 5: Keadby		
Receptor type: Recreational / residential	**Direction of view: Northeast**	**Distance from Order Limits: 2.8km**
Description of baseline view: The view offers riverside views across the River Trent from the adjacent flood embankment. Representative of both residential and recreational receptors within Keadby village, the lack of vegetation in the immediate foreground affords open views towards the river's eastern bank. However, intervening vegetation in the middle distance visually coalesces to restrict some long-distance views. A network of electricity transmission pylons cross the River Trent at the left-hand frame of the view. Built form within Gunness is perceptible in the central frame, with turbines at Grange and Keadby Grange Wind Farms visible against the skyline. The upper extents of built form at Flixborough Industrial Estate are also evident in the view.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor The receptors at this location are the local community within Keadby, typically of high susceptibility to changes in views / visual amenity. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		
Nature of effect (magnitude) during construction Scale of effect Construction activity would be evident in middle ground views, protruding above intervening vegetation. However, the visual change would affect only a short section of the overall viewpoint panorama. The scale of anticipated visual change would therefore be medium. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Keadby. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be medium.		
Level of effect during construction Overall, the level of effect is judged to be moderate adverse at Viewpoint 5 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The immediate foreground of Viewpoint 5 would be comparable with the existing baseline view at operation. The upper extents of the Project would be visible, mainly comprising the ERF protruding above intervening vegetation parallel the River Trent. This would include the ERF stack and visible plume on colder days, but not low-level lighting. As landscape mitigation tree planting would not be visible from this view, the scale of visual change is unlikely to reduce by year 15. The scale of effect at years 1 and 15 is judged to be small. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Keadby. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall the magnitude of effect is judged to be small.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be minor adverse at Viewpoint 5 at year 1.		

Viewpoint 5: Keadby		
Receptor type: Recreational / residential	**Direction of view: Northeast**	**Distance from Order Limits: 2.8km**
Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 5 at year 15.		

Table 30: Viewpoint 6: Visual effects

Viewpoint 6: Outgate, Ealand		
Receptor type: Recreational	**Direction of view: Northeast**	**Distance from Order Limits: 6.7km**
Description of baseline view: Characterised by a rural quality, the viewpoint offers panoramic views across the agricultural landscape of the River Trent floodplain. The turbines at Keadby Grange Wind Farm as well as the network of electricity transmission pylons form vertical features within the view. Keadby Power Station is also visible against the skyline. Intervening vegetation occupying the central frame restricts some long-distance views, although Flixborough Industrial Estate is just discernible in the background view.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor Recreational users at this location are of high susceptibility to visual intrusion from the Project. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		
Nature of effect (magnitude) during construction Scale of effect Long range views towards the Application Land would be restricted in both summer and winter due to the proliferation of intervening vegetation in the middle ground. However, some construction works on high level parts of the development will be visible in the context of wind turbines in the view. The scale of visual change from this location would be small. Geographical extent of view affected The receptors at this location would be partially transient in nature and the view would be experienced by relatively few people. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be small.		
Level of effect during construction Overall, the level of effect is judged to be minor adverse at Viewpoint 6 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The ERF will be visible in the distance, behind the wind farm, with its stack and upper roofline above the far skyline of the ridge. Low-level lighting is unlikely to be visible, though the plume will be seen on colder days. Some existing vegetation is likely to screen the lower part of the buildings, and proposed mitigation is unlikely to be visible. The scale of change will be small at year 1 and year 15. Geographical extent of view affected The receptors at this location would be partially transient in nature and the view would be experienced by relatively few people. Duration / reversibility		

Viewpoint 6: Outgate, Ealand		
Receptor type: Recreational	**Direction of view: Northeast**	**Distance from Order Limits: 6.7km**
The change in the view is considered to be long term and not reversible. Overall the magnitude is judged to be small.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be minor adverse at Viewpoint 6 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 6 at year 15.		

Table 31: Viewpoint 7: Visual effects

Viewpoint 7: Ox Pasture Lane, Luddington		
Receptor type: Residential / Transport	**Direction of view: Southeast**	**Distance from Order Limits: 2.7km**
Description of baseline view: Located on the B1392 Meredyke Road at the residential edge of Luddington, the viewpoint affords long distance views across agricultural land comprising the floodplain of the River Trent. Wharfside developments, including Flixborough Industrial Estate and Grove Wharf, are visible against the skyline. Whilst this built development detracts from the rural foreground, the backdrop provided by the wooded scarp reduces the vertical prominence of this built form. A network of electricity pylons also cross the landscape of the background view.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor The receptors at this location are predominantly the local community within Luddington, characterised by a high susceptibility to the Project. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be low.		
Nature of effect (magnitude) during construction Scale of effect A medium visual change is anticipated at construction due to the distance of view, with cranes and machinery partially obscured by the combination of existing built form and extent of existing vegetation. Views of construction activity would form a component of the overall panorama. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Luddington. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be medium.		
Level of effect during construction Overall, the level of effect is judged to be moderate adverse at Viewpoint 7 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The ERF building would be clearly visible alongside existing development at Flixborough Industrial Estate, reaching above the far skyline. The ERF stack and, on colder days, the plume, will be visible and some low-level lighting may be seen though at distance. The Project would be viewed		

Viewpoint 7: Ox Pasture Lane, Luddington		
Receptor type: Residential / Transport	**Direction of view: Southeast**	**Distance from Order Limits: 2.7km**
as a small element of this open view. Landscape mitigation planting is unlikely to be effective due to distance. The scale of the change is judged to be small at year 1 and year 15. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Luddington. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be small.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be minor adverse at Viewpoint 7 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 7 at year 15.		

Table 32: Viewpoint 8: Visual effects

Viewpoint 8: Luddington Road, Garthorpe		
Receptor type: Residential	**Direction of view: South**	**Distance from Order Limits: 4.0km**
Description of baseline view: Representative of residential receptors within Garthorpe, this location affords panoramic views across farmland in the fore and middle ground. The wooded scarp slope accommodating Burton Wood forms a key feature in the background view, with views available to residential properties within Burton upon Stather. Views towards Flixborough Industrial Estate are filtered by intervening vegetation in the central frame, whilst turbines at both Grange and Keadby Grange Wind Farms are visible in the background view. Built form at Keadby Power Station protrudes above the vegetated backdrop in the background view.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor The receptors at this location are predominantly the local community within Garthorpe, characterised by a high susceptibility to the Project. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		
Nature of effect (magnitude) during construction Scale of effect Construction activity is unlikely to be clearly visible, except for construction of the upper ERF and its stack, due to the extent of intervening vegetation and distance of the view. The scale of change would be small. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Garthorpe. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be small.		
Level of effect during construction		

Viewpoint 8: Luddington Road, Garthorpe		
Receptor type: Residential	**Direction of view: South**	**Distance from Order Limits: 4.0km**
Overall, the level of effect is judged to be moderate adverse at Viewpoint 8 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The upper part of the ERF, its stack and, on colder days the visible plume, would all be seen above the skyline. Other buildings and low-level lighting would be largely screened by existing trees in the landscape. The ERF stack would be seen in the context of pylons and wind turbines, and the ERF would be a minor feature in the open view. Mitigation planting would not be visible, and the scale of change is judged to be small at year 1 and year 15. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Garthorpe. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be small.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be minor adverse at Viewpoint 8 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 8 at year 15.		

Table 33: Viewpoint 9: Visual effects

Viewpoint 9: Stather Road, Burton Stather		
Receptor type: Residential	**Direction of view: South**	**Distance from Order Limits: 3.0km**
Description of baseline view: The viewpoint offers southerly views towards Flixborough Industrial Estate, experienced by residential receptors within Burton upon Stather. Tree planting bordering a roadside hedgerow offers some screening, particularly in the more elevated sections, although filtered views are available. Arable farmland occupies the middle ground, crossed by successive lines of hedgerow which restrict longer distance views. The channel of the River Trent is visible in the right-hand frame of the view, with a network of electricity transmission pylons visible against the sky. The turbines at Grange Wind Farm and the upper extents of Flixborough Industrial Estate protrude above the intervening vegetation in the middle ground.		
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor The receptors at this location are predominantly the local community within Burton Stather, characterised by a high susceptibility to the Project. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be high.		
Nature of effect (magnitude) during construction Scale of effect The upper extent of cranes and construction activity may be apparent from this location, or nearby, but will be largely screened by intervening vegetation in the landscape. Views of low-level		

Viewpoint 9: Stather Road, Burton Stather		
Receptor type: Residential	**Direction of view: South**	**Distance from Order Limits: 3.0km**
construction activity would not be perceptible from this location. Any visible activity would be a minor element of the view, and the scale of change would be imperceptible. Views towards construction activity associated with the Project The upper extent of cranes and construction activity would be apparent to the rear of intervening vegetation. Views of low-level construction activity would not be perceptible from this location. Due to the short section of the panorama affected, this would constitute a small change in the view. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Burton upon Stather. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be imperceptible.		
Level of effect during construction Overall, the level of effect is judged to be negligible at Viewpoint 9 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The ERF stack and plume (on colder days) would be glimpsed in this view and may be seen from other locations in the vicinity of this viewpoint. Most of the development would be screened behind the intervening vegetation in the middle ground. Lighting and mitigation planting are unlikely to be visible. The scale of visual change is anticipated to be small at both years 1 and 15. Geographical extent of view affected The view would be experienced by relatively few people, limited to the local community on the edge of Burton upon Stather. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be small.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be minor adverse at Viewpoint 9 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 9 at year 15.		

Table 34: Viewpoint 10: Visual effects

Viewpoint 10: A1077 near Dragonby		
Receptor type: Transport	**Direction of view: West**	**Distance from Order Limits: 650m**
Description of baseline view: The view offers locally elevated, oblique views from the carriageway of the A1077. Haul road construction dominates the immediate foreground, where the land falls in the middle ground towards the course of an unnamed stream. Located to the west of disused opencast ironstone workings, built form within the northern extent of Foxhills Industrial Park comprises the middle ground. Urban land use within Scunthorpe is also visible, creating an urban skyline at the left-hand frame of the view. The combination of localised topography and three blocks to the south of Sheffield's Hill obscure views at the right-hand frame of the view. Electricity transmission pylons, as well as turbines at Bagmoor, Grange and Keadby Grange Wind Farms, form vertical features of the panorama.		

Viewpoint 10: A1077 near Dragonby		
Receptor type: Transport	**Direction of view: West**	**Distance from Order Limits: 650m**
Sensitivity of view during construction and operation (year 1 and year 15) Susceptibility of visual receptor Representative of users of the A1077, receptor susceptibility is assessed as medium. Value of view The view is low value and is likely to be experienced mostly by the local community. Overall sensitivity is judged to be medium.		
Nature of effect (magnitude) during construction Scale of effect The scale of visual change at construction would be small due to the extent of existing built form in the panorama. Views of construction activity at Dragonby siding expansion, as well as the upper extents of cranes, would be potentially available in the background view, albeit forming a minor component of the existing view. Geographical extent of view affected Transient views would be offered from users of the A1077, experienced by relatively few people. Duration / reversibility The change in the view would be short term in duration and reversible. Overall magnitude is judged to be small.		
Level of effect at construction Overall, the level of effect is judged to be minor adverse at Viewpoint 10 at construction.		
Nature of effect (magnitude) during operation (year 1 and year 15) Scale of effect The Dragonby siding expansion would be perceptible in the middle ground, although this would not form a distinct new land use within the context of the view. Other than the upper part of the ERF stack and plume (on colder days), no elements of the Project would be visible from this location due to the intervening topography. The scale of effect is judged to be imperceptible at both years 1 and 15. Geographical extent of view affected Transient views would be offered from users of the A1077, experienced by relatively few people. Duration / reversibility The change in the view is considered to be long term and not reversible. Overall magnitude is judged to be imperceptible.		
Level of effect during operation (year 1 and year 15) Year 1 Overall, the level of effect is judged to be negligible at Viewpoint 10 at year 1. Year 15 Overall, the level of effect is judged to be negligible at Viewpoint 10 at year 15.		

Table 35: Viewpoint 11: Visual effects

Viewpoint 11: Public footpath at Phoenix Local Nature Reserve		
Receptor type: Recreational	**Direction of view: West**	**Distance from Order Limits: 200m**
Description of baseline view: Representative of users of the local PRoW network, the view affords locally elevated views from the foothills of the ironstone scarp. Agricultural land, enclosed by fragmented hedgerows and crossed by a network of electricity transmission pylons, occupies the foreground. Industrial built		

Viewpoint 11: Public footpath at Phoenix Local Nature Reserve		
Receptor type: Recreational	**Direction of view: West**	**Distance from Order Limits: 200m**

form characterises the middle ground, interspersed with a tract of vegetation at Willow Holt, a solar farm and Park Ings Farm. The developed land use extends into the background view, with large scale industrial units at Flixborough Industrial Estate and the riverside wharfs prominent within the view. Within the background view, turbines within Keadby Grange and Twin Rivers Wind Farms provide vertical features within the panorama. Views looking northwest are foreshortened by the rising landscape of the ironstone scarp, with the turbines at Grange Wind Farm perceptible against the skyline.

Sensitivity of view during construction and operation (year 1 and year 15)
Susceptibility of visual receptor
Recreational users at this location are of **high** susceptibility to visual intrusion from the Project.
Value of view
The view is **low** value and is likely to be experienced mostly by the local community.
Overall sensitivity is judged to be high.

Nature of effect (magnitude) during construction
Scale of effect
Construction activity would be evident in middle ground views, protruding above the existing built form of Flixborough Industrial Estate. However, the introduction of these features would not form incongruous elements within the existing degraded urban context of the middle ground. The scale of anticipated visual change would extend across a wide section of the panorama, resulting in a medium scale of effect.
Geographical extent of view affected
The receptors at this location would be partially transient in nature and the view would be experienced by relatively few people.
Duration / reversibility
The change in the view would be short term in duration and reversible.
Overall magnitude is judged to be medium.

Level of effect during construction
Overall, the level of effect is judged to be moderate adverse at Viewpoint 11 at construction.

Nature of effect (magnitude) during operation (year 1 and year 15)
Scale of effect
In this view the ERF and its stack would be seen beyond the existing solar farm, with the elevated walkway connecting to the RHTF/CBMF building. The adjacent PRF would be seen partly behind existing woodland. The new access road, and the EV and H_2 refuelling buildings, would be seen on the left (south) of the view. The scale of change in the view would be medium at year 1 due to the scale of the Project and the nature of the baseline view. The Project would involve little change in the industrial character of the view, though the proposed buildings, particularly the ERF, would be larger than anything existing. Lighting is likely to be visible, as is the plume on colder days. The maturation of mitigation planting, proposed along the eastern side of the larger buildings, would soften and 'break-up' the volume of built form by year 15, reducing the scale of change to small, though the bulk of the ERF and its stack would remain visible.
Geographical extent of view affected
The receptors at this location would be partially transient in nature and the view would be experienced by relatively few people.
Duration / reversibility
The change in the view is considered to be long term and not reversible.
Overall magnitude is judged to be medium at year 1 and small at year 15.

Level of effect during operation (year 1 and year 15)

Viewpoint 11: Public footpath at Phoenix Local Nature Reserve		
Receptor type: Recreational	**Direction of view: West**	**Distance from Order Limits: 200m**
Year 1 Overall, the level of effect is judged to be moderate adverse at Viewpoint 11 at year 1. Year 15 Overall, the level of effect is judged to be minor adverse at Viewpoint 11 at year 15.		

8.2.4 Summary of Visual Effects

8.2.4.1 A summary of the residual effects on visual amenity during construction and operation is provided below in Table 36**.**

Table 36: Summary of visual effects

Viewpoint	Receptor group	Effect during construction	Effect during operation (year 1)	Effect during operation (year 15)
Viewpoint 1: Trent Side, Amcotts	Residential / recreational	Major adverse (significant)	Major adverse (significant)	Major adverse (significant)
Viewpoint 2: Stather Road, Flixborough	Transport / recreational	Major adverse (significant)	Major adverse (significant)	Moderate adverse (significant)
Viewpoint 3: Footpath at Grange Wind Farm	Recreational	Moderate adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)
Viewpoint 4: A1077, Scunthorpe	Residential / transport	Moderate adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)
Viewpoint 5: Keadby	Residential / recreational	Moderate adverse (significant)	Minor adverse (not significant)	Minor adverse (not significant)
Viewpoint 6: Outgate, Ealand	Recreational	Minor adverse (not significant)	Minor adverse (not significant)	Minor adverse (not significant)
Viewpoint 7: Ox Pasture Lane, Luddington	Residential	Moderate adverse (significant)	Minor adverse (not significant)	Minor adverse (not significant)
Viewpoint 8: Luddington Road, Garthorpe	Residential	Moderate adverse (significant)	Minor adverse (not significant)	Minor adverse (not significant)
Viewpoint 9: Stather Road, Burton Stather	Residential	Negligible (significant)	Minor adverse (not significant)	Minor adverse (not significant)
Viewpoint 10: A1077 near Dragonby	Transport	Minor adverse (not significant)	Negligible (not significant)	Negligible (not significant)

Viewpoint	Receptor group	Effect during construction	Effect during operation (year 1)	Effect during operation (year 15)
Viewpoint 11: Public footpath at Phoenix Local Nature Reserve	Recreational	Moderate adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)

9. CONCLUSIONS

9.1.1.1 This chapter of the ES has assessed the impacts from the Project on landscape and visual receptors. The residual effects identified in Section 8 include consideration of mitigation measures described in Section 7. The residual effects to be considered by the decision maker are those set out in Table 24 and Table 36, and these are summarised in the paragraphs below.

9.2 Landscape Character

9.2.1.1 The Project would have a major adverse (significant) effect on the landscape character of the Application Land during construction, reducing to moderate adverse (significant) at year 1 of the operational stage. During construction, adverse effects on landscape character would arise from the presence of construction activity having an incongruous influence. Unlike the operational stage, construction effects would be both reversible and of short duration. The Project would represent a change in landscape character and land use across the Energy Park Land, in a context of a partly industrialised location where the existing Flixborough Industrial Estate forms a key element of the landscape. Over time, landscape mitigation would mature and integrate the development into the landscape, reducing effects on the landscape of the Energy Park Land to minor adverse (not significant).

9.2.1.2 Effects on the landscape character of Flat Drained Farmland LCT and Industrial Landscape LCT (Trent Levels LCA) are judged to be moderate adverse (significant) in both the construction and operational (year 1) stages. Moderate adverse (significant) effects are also predicted for Steep Wooded Scarp LCT and Despoiled Landscape LCT (Lincolnshire Edge LCA) during construction and year 1 of operation. The landscape mitigation included as part of the Project would provide a degree of landscape integration by year 15, reducing effects on all LCTs to minor adverse (not significant).

9.3 Visual amenity

9.3.1.1 Views of the Project have been considered within the Visual Study Area (7.5 km radius) and evaluated at 11 representative locations. A ZTV based on assumed maximum parameters for the Project suggests that views would be obtainable from most of the Visual Study Area. Long range views would be largely available from the western portion of the Visual Study Area, and closer views from land lying close to the River Trent. Vegetation and buildings within Scunthorpe will screen views of the Project, restricting the availability of views to the east and southeast. Localised screening is also provided by the undulating topography associated with the ironstone and limestone scarps to the east.

9.3.1.2 The assessment identifies major adverse effects, albeit temporary and reversible, during construction for receptors with short viewing distances or characterised by a lack of mature intervening vegetation. Major adverse (significant) levels of effect are predicted at the construction phase for

viewpoints 1 and 2, within Amcotts and Flixborough respectively, due to their short viewing distances. Moderate adverse (significant) effects at the construction phase are also identified at Viewpoints 3, 4, 5, 7, 8, and 11, none of which are more than 4km from the Order Limits.

9.3.1.3 At year 1 of the operational stage, effects are predicted to be major (significant) at Viewpoints 1 and 2, and moderate (significant) at Viewpoints 3, 4 and 11 (all within 2 km). At more distant viewpoints, year 1 effects are predicted to be minor (not significant). Operational stage effects are primarily attributable to the largest project elements, the ERF and its stack, and to a lesser extent the RHTF/CBMF and PRF buildings. Other elements of the Project would have lesser or more localised effects on views.

9.3.1.4 The incremental growth of intervening vegetation and landscape mitigation planting indicates that visual effects would reduce to minor adverse (not significant) at year 15 at all viewpoints with the exception of Viewpoint 1 (major at year 15) and Viewpoint 2 (moderate at year 15).

10. REFERENCES

- Department for Energy and Climate Change (2011a) Overarching National Policy Statement for Energy (EN-1)
- Department for Energy and Climate Change (2011b) National Policy Statement for Renewable Energy Infrastructure (EN-3)
- Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment (Third Edition)
- Landscape Institute (2019) Technical Guidance Note 06/19 Visual Representation of Development Proposals
- Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework
- Natural England (2014a) National Character Area profile: 39. Humberhead Levels
- Natural England (2014b) National Character Area profile: 45. Northern Lincolnshire Edge with Coversands
- North Lincolnshire Council (2011) North Lincolnshire Local Development Framework: Core Strategy Adopted
- North Lincolnshire Council (2003) North Lincolnshire Local Plan
- North Lincolnshire Council (1999) North Lincolnshire Landscape Character Assessment and Guidelines

APPENDIX A FIGURES

Date: May 2022

North Lincolnshire Green Energy Park
ERM

LUC

Figure 12.2: Study Areas

Site red line boundary
Landscape Study Area
Visual Study Area

7.5km
2.5km

0 1 2 km

Map scale 1:60,000 @ A3

CB NC EB bjerketvedt_l LUC 11347_Fig12_2_r3_StudyAreas_A3L 18/01/2022
Source: OS, ERM.

North Lincolnshire Green Energy Park
ERM

LUC

Figure 12.3: Lansdscape Character

Site red line boundary
Landscape Study Area

North Lincolnshire Landscape Character Assessment (1999)

Landscape Character Types and Areas:

Urban area

Lincolnshire Edge (LE):

DL: Despoiled Landscape
EWF: Elevated Wooded Farmland
IL: Industrial Landscape
SWSS: Steep Wooded Scarp Slope

Trent Levels (TL):

FDF: Flat Drained Farmland

EWF
SWSS
DL
IL
FDF
Urban area

Map scale 1:20,000 @ A3

0 0.5 1 km

CB:NC EB:bjerkefvedt_l LUC 11347_Fig12_3_r3_LandscapeCharacter_A3L 18/01/2022
Source: OS, NLC, ERM.

North Lincolnshire Green Energy Park
ERM

LUC

Figure 12.4: ZTV

Site red line boundary
Visual Study Area
Screening Features
Stack Visible

VP1
VP2
VP3
VP4
VP5
VP6
VP7
VP8
VP9
VP10
VP11

0 1 2 km

Map scale 1:60,000 @ A3

CB:NC EB:bjerketvedt_l LUC 11347_Fig12_4_r3_ZTV_A3L 18/01/2022
Source: OS, ERM.

APPENDIX B PHOTOGRAPHY, BLOCK VISUALISATIONS AND PHOTOMONTAGES

Date: May 2022

LUC

OS reference:	485845 E 414219 N
AOD:	5.48m
Direction of view:	68°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 15:10

Distance from Order Limits: 220m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 5a

Viewpoint 1: Church Street, Amcotts

LUC

OS reference:	485845 E 414219 N
AOD:	5.48m
Direction of view:	68°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 15:10

Distance from Order Limits: 220m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 5b

Viewpoint 1: Church Street, Amcotts

LUC

OS reference:	486781 E 414787 N
AOD:	23.88m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 10:50

Distance from Order Limits: Within boundary

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 6a

Viewpoint 2: Stather Road, Flixborough

LUC

OS reference:	486781 E 414787 N
AOD:	23.88m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 10:50

Distance from Order Limits: Within boundary

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 6b

Viewpoint 2: Stather Road, Flixborough

LUC

OS reference:	486556 E 415750 N
AOD:	6.51m
Direction of view:	207°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 10:05

Distance from Order Limits: 700m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 7a

Viewpoint 3: Footpath at Flixborough Grange Wind Farm

LUC

OS reference:	486556 E 415750 N
AOD:	6.51m
Direction of view:	207°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 10:05

Distance from Order Limits: 700m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 7b

Viewpoint 3: Footpath at Flixborough Grange Wind Farm

LUC

OS reference:	486879 E 412745 N
AOD:	3.93m
Direction of view:	322°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 12:55

Distance from Order Limits: Within boundary

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 8a

Viewpoint 4: A1077, Scunthorpe

LUC

OS reference:	486879 E 412745 N
AOD:	3.93m
Direction of view:	322°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 12:55

Distance from Order Limits: Within boundary

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 8b

Viewpoint 4: A1077, Scunthorpe

LUC

OS reference:	483569 E 411971 N
AOD:	6.27m
Direction of view:	56°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 14:25

Distance from Order Limits: 2.8km

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 9

Viewpoint 5: Keadby

LUC

OS reference:	479460 E 412216 N
AOD:	1.9m
Direction of view:	78°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 13:45

Distance from Order Limits: 6.7km

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 10

Viewpoint 6: Outgate, Ealand

LUC

OS reference:	483480 E 416454 N
AOD:	2.57m
Direction of view:	119°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 15:45

Distance from Order Limits: 2.7km

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 11

Viewpoint 7: Ox Pasture Lane, Luddington

LUC

OS reference:	484583 E 418862 N
AOD:	3.23m
Direction of view:	160°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 16:15

Distance from Order Limits: 4.0km

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 12

Viewpoint 8: Luddington Road, Garthorpe

LUC

OS reference:	486712 E 418165 N
AOD:	10.23m
Direction of view:	195°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 09:15

Distance from Order Limits: 3.0km

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 13

Viewpoint 9: Stather Road, Burton Stather

LUC

OS reference:	490900 E 414552 N
AOD:	71.22m
Direction of view:	272°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 12:20

Distance from Order Limits: 650m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 14

Viewpoint 10: A1077 near Dragonby

LUC

OS reference:	487687 E 414317 N
AOD:	31.32m
Direction of view:	272°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 11:25

Distance from Order Limits: 200m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 15a

Viewpoint 11: Footpath

LUC

OS reference:	487687 E 414317 N
AOD:	31.32m
Direction of view:	272°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 11:25

Distance from Order Limits: 200m

Data Sources:
Topography data used to inform 3D model: 1m National LiDAR programme DTM, Environment Agency
Development model provided by Fichtner Engineers Ltd in 3D AutoCAD DWG format on 28/04/2021

Figure: 15b

Viewpoint 11: Footpath

LUC

OS reference:	485845 E 414219 N
AOD:	5.48m
Direction of view:	63°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 15:10

Distance from Order Limits: 220m

Images and illustrative design produced by GSDA Ltd

Figure: A1

Viewpoint 1: Church Street, Amcotts

LUC

OS reference:	486781 E 414787 N
AOD:	23.88m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 10:50

Distance from Order Limits: Within boundary

Images and illustrative design produced by GSDA Ltd

Figure: A2

Viewpoint 2: Stather Road, Flixborough

LUC

OS reference:	487687 E 414317 N
AOD:	31.32m
Direction of view:	272°
Horizontal field of view:	84° (cylindrical projection)

Vertical field of view:	14.2°
Principal distance:	522 mm
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	Nikon D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	31/03/2021 11:25

Distance from Order Limits: 200m

Images and illustrative design produced by GSDA Ltd

Figure: A3

Viewpoint 11: Footpath