

Environmental Statement: Volume I

Chapter 10: Landscape and Visual Amenity

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10.0 LANDSCAPE AND VISUAL AMENITY

10.1 Introduction

10.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the Proposed Development on landscape character (as a resource in its own right) and visual amenity.

10.1.2 This chapter is supported by Figures 10.1 to 10.27, provided in ES Volume II (Application Document Reference 6.3) and Appendices 10A Assessment Methodology, 10B Proposed Viewpoints, 10C Proposed Viewpoint Location Plan and Appendix 10D Photomontages – Viewpoint K provided in ES Volume III (Application Document Reference 6.4).

10.2 Legislation and Planning Policy Context

Legislation

10.2.1 The landscape and visual impact assessment takes account of the legislation relevant to the landscape and visual issues, including the European Landscape Convention and the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

Planning Policy Context

National Planning Policy

10.2.2 The Overarching National Policy Statement (NPS) for Energy EN-1 (Ref 10-1) includes a number of statements pertinent to the potential landscape, including green infrastructure (GI) and visual impacts of energy infrastructure in general.

10.2.3 Section 5.9 of EN-1 sets out the requirements for assessing and mitigating landscape and visual impacts of proposed nationally significant energy infrastructure projects. The scope of the assessment should include construction phase effects as well as the effects of the completed facility and its operation on landscape components, landscape character and views and visual amenity.

10.2.4 In terms of mitigation, EN-1 encourages the reduction in scale of the buildings taking into consideration function, appropriate siting, design including colours and materials, and landscaping schemes to mitigate adverse landscape and visual impacts.

10.2.5 EN-1 paragraphs 5.9.15 to 5.9.16 state:

“The scale of such projects means that they will often be visible within many miles of the site of the proposed infrastructure. The IPC [Planning Inspectorate] should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project.

In reaching a judgment, the IPC should consider whether any adverse impact is temporary, such as during construction, and/or whether any adverse impact on the landscape will be capable of being reversed in a timescale that the IPC considers reasonable.”

10.2.6 EN-1 paragraph 5.9.18 states: *“All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. The IPC will have to judge whether the*

visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project.”

10.2.7 Paragraph 5.9.22 states *“Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.”*

10.2.8 Section 5.10 of EN-1 establishes the requirements for identifying and mitigating impacts of energy infrastructure projects on open space (including GI). As follows:

“An energy infrastructure project will have direct effects on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development. Given the likely locations of energy infrastructure projects there may be particular effects on open space including green infrastructure.

Where green infrastructure is affected, the Planning Inspectorate should consider imposing requirements to ensure the connectivity of the green infrastructure network is maintained in the vicinity of the development and that any necessary works are undertaken, where possible, to mitigate any adverse impact.”

10.2.9 The NPS for Fossil Fuel Electricity Generating Infrastructure EN-2 (Ref 10-2) provides further detail with respect to the impacts of large scale structures associated with fossil fuel generating stations.

10.2.10 Section 2.65 of EN-2 states that:

10.2.11 *“It is not possible to eliminate the visual impacts associated with a fossil fuel generating station. Mitigation is therefore to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable.”* The design should provide the best fit with the existing local landscape and to minimise the impact through use of appropriate external finishes and colour choice and to enclose low level buildings and structures to reduce impacts from nearby receptors.

10.2.12 The National Planning Policy Framework (‘NPPF’) was adopted in March 2012 and updated in February 2019 (Ref 10-3) and replaced the majority of Planning Policy Statements and Planning Policy Guidance Notes. The policies contained within the NPPF are expanded upon and supported by the ‘Planning Practice Guidance’, which was originally published in March 2014 and has been updated incrementally since.

10.2.13 Within Paragraph 15 of the NPPF(Ref 10-3) the Government sets out a number of overriding core planning principles that are relevant to the landscape including:

- Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;
- Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

- Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land.

Local Planning Policy

10.2.14 The North Lincolnshire Core Strategy (Ref 10-6) was adopted in June 2011. Policies within the adopted Core Strategy that are relevant to this assessment are summarised below.

North Lincolnshire Core Strategy Adopted June 2011

- 10.2.15 Paragraph 11.10 of the North Lincolnshire Core Strategy states that; *“The aim of the Core Strategy is to protect and enhance North Lincolnshire’s natural heritage and world class landscapes and habitats by maintaining and creating a sensitive balance between urban and rural, built form and natural assets, and physical and cultural links between townscape and landscape. This will be incorporated in new areas and replacement of existing areas such as... replacement land (mitigation and compensation) for loss of habitat and landscape to industry at the South Humber Bank.”*
- 10.2.16 Policy CS12 advises that the biodiversity and landscape character of the Humber Estuary should be protected and enhanced by harmonising the landscape with port related development activities. The policy states that the South Humber Gateway Conservation Mitigation Strategy Delivery Plan (SHGCMSDP) will identify appropriate areas of mitigation for the loss of offsite Special Protection Areas (SPA) and Ramsar water bird roosting and foraging habitat; ensure the protection of the Humber Estuary SPA, Special Area of Conservation (SAC) and Ramsar site; and develop new green infrastructure directly linked to the Green Infrastructure Strategy for North Lincolnshire. The policy also states the need for new development to harmonise with North Killingholme Haven Pits SSSI and Local Wildlife Sites such as Chase Hill Wood (a proposed Local Nature Reserve) Burkinshaw’s Covert, Halton Marsh Clay Pits and Rosper Road Pools.
- 10.2.17 Policy CS16 states that the council will protect, enhance and support a diverse and multi-functional network of landscape, greenspace and waterscape by not permitting development that would result in unacceptable conflict with the function(s) or characteristics of that area and requiring that development proposals improve the quality and quantity and address local deficiencies of accessible landscape, greenspace and waterscape. The policy also requires the protection of trees, hedgerows and historic landscape.

North Lincolnshire Local Plan ‘Saved Policies’

Policy LC7 - Landscape Protection

10.2.18 The North Lincolnshire Local Plan (Ref 10-4) was adopted in May 2003 (Ref 10-5) and its saved policies form part of NLC’s adopted Local Plan. Policies within the North Lincolnshire Local Plan that are relevant to this assessment are summarised below.

10.2.19 Policy LC7 requires that special attention will be given to protecting the scenic quality and distinctive local character of the landscape within rural settlements or within the open countryside. The policy requires that proposals for development have regard for the conservation and enhancement of the landscape and its features and seek to maintain local variations in the landscape. It states that existing landscape features and habitats of landscape importance will be protected and enhanced and requires that proposals for development will have regard to the landscape assessment and guidelines and the Countryside Design Summary), which are to be used as supplementary planning guidance. The Countryside Design Summary provides guidance on integrating industry with the landscape in section 13 and 15.

Policy LC12 - Protection of Trees, Woodland and Hedgerows

10.2.20 Policy LC12 requires proposals for development to ensure where possible, the retention of trees, woodland and hedgerows and states that particular regard will be given to the protection of these within the setting of settlements and providing amenity value within built up areas, alongside the protection of ancient woodlands and historic hedgerows. The policy requires that landscaping and tree and hedgerow planting schemes accompany applications for new development where it is appropriate to the development and its setting.

Policy LC20 - South Humber Bank - Landscape Initiative

10.2.21 Policy LC20 proposes that throughout the South Humber Bank Landscape Initiative area certain measures should be taken. These include provision of stepped-back security fences, fringed with shrubs and trees; establishment of mixed broad-leaf and conifer screening belts; maintenance of features such as woods and introduction of lakes, ponds and marshes; careful management of existing hedges to increase height; and new tree and hedge planting, carefully positioned for maximum effect.

North East Lincolnshire Local Plan Adopted June 2018

10.2.22 The North East Lincolnshire Local Plan (Ref 10-7) was adopted in June 2018. Policies within the adopted Local Plan that are relevant to this assessment are summarised below.

Policy 42 Landscape

10.2.23 Policy 42 advises that landscape character should be given due consideration in the implementation of development proposals and that developers should have regard to the landscape context and type as identified in the Landscape Character Assessment and consider the landscape guidelines and management strategies relevant to the prevalent landscape type. The policy also promotes seeking opportunities to offset development impacts, to enhance landscape quality, to incorporate suitable landscape planting; to retain and protect trees and hedgerows and, to retain, protect and restore elements that contribute to historic landscape character.

10.3 Assessment Methodology and Significance Criteria

10.3.1 This landscape and visual impact assessment has been based on the following best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013) (Ref 10-8); and

- An Approach to Landscape Character Assessment (Natural England, 2014) (Ref 10-9).

Impact Assessment and Significance Criteria

- 10.3.2 A detailed description of the assessment methodology is included in Appendix 10A (ES Volume III, Application Document Reference 6.4) and is summarised below.
- 10.3.3 As described in Chapter 2: Assessment Methodology of this ES, for the purposes of comparison and in order to establish a 'control' scenario against which the effects of the Proposed Development may be assessed, the baseline conditions are projected forward to produce a future 'no development' (baseline) scenario. The potential impacts of the Proposed Development upon the baseline landscape and receptor views are then identified and any resulting effects are then assessed and classified. Potential landscape and visual impacts and the resulting effects (both adverse and beneficial) are considered for the following scenarios:
- Construction (2021-2022);
 - Operation (2022): and
 - Decommissioning (2062)
- 10.3.4 Chapter 17: Cumulative and Combined Effects assesses effects accruing from the Proposed Development and other potential major developments identified within the vicinity of the Proposed Development.
- 10.3.5 Effects may be temporary, permanent, short-term or long-term. Landscape and visual effects may be further categorised as being either direct, *i.e.* originating from the Site, or indirect within the Zone of Theoretical Visibility (ZTV), *e.g.* off-site visual impact of construction traffic.

Landscape Impact Assessment Methodology

- 10.3.6 In assessing and classifying the predicted effects from any likely impacts to the landscape resulting from the Proposed Development, the following criteria are considered:
- Landscape character;
 - Landscape sensitivity; and
 - Magnitude of likely impacts that may affect the landscape.
- 10.3.7 Landscape impacts are considered, including both the direct and indirect impacts of the Proposed Development upon landscape elements and features (or components), as well as the impact upon the general landscape character of the surrounding area.
- 10.3.8 The relationship between sensitivity and magnitude of impact allows an assessment of the relative significance of predicted landscape effects to be made. The sensitivity of the landscape to change is the degree to which a particular Landscape Character Area (LCA) or feature can accommodate changes or new features, without unacceptable detrimental effects to its essential characteristics.
- 10.3.9 Landscape sensitivity at both the Site and Study Area scale is determined by the landscapes value and susceptibility to change. Landscape value is established by the

landscape importance in terms of any designations that may apply, or ecological, cultural or recreational value.

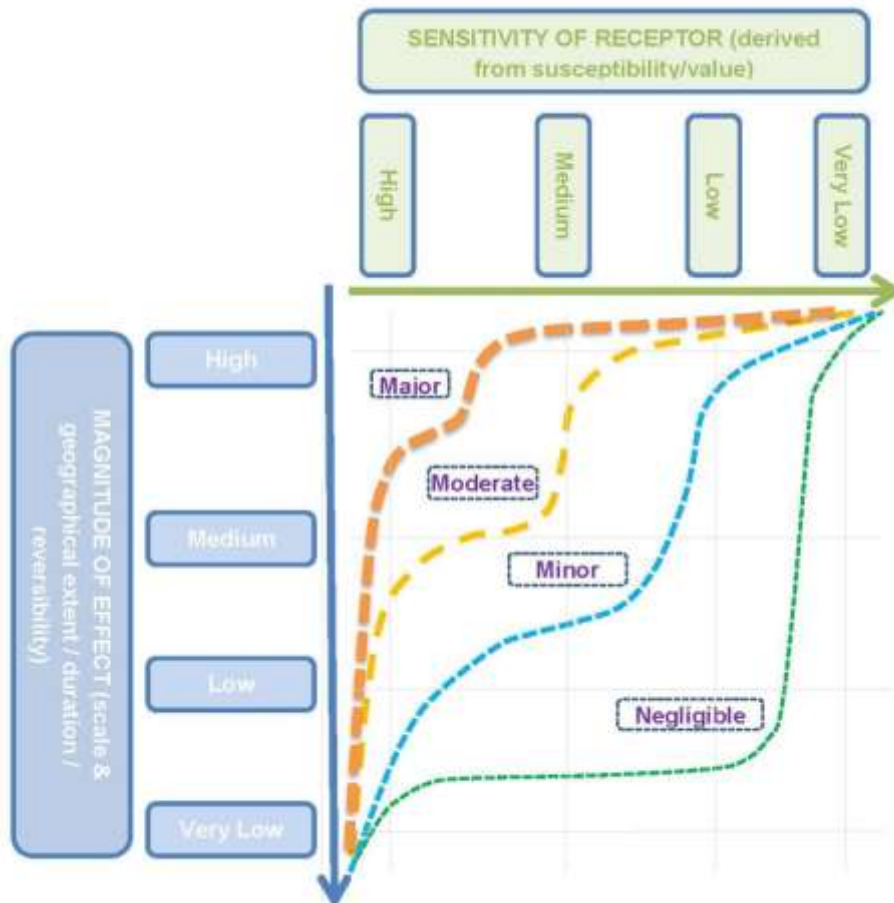
- 10.3.10 The susceptibility to change is a measure of the ability of a landscape to “accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies” (para 5.40, GLVIA3).
- 10.3.11 The magnitude of a predicted landscape impact relates to the size, extent or degree of change likely to be experienced as a result of the Proposed Development. The magnitude takes into account whether there is a direct impact resulting in the loss of landscape components, or a change beyond the land-take of the Proposed Development that might have an effect on the character of the area, and whether the impact is permanent or temporary.
- 10.3.12 Diagram 10.1 below presents a diagram to describe the relationship between sensitivity and magnitude of impacts on the landscape to determine the effect. GLVIA 3 dictates that this is not a prescriptive process and is provided as a guide to how combinations of sensitivity and magnitude are typically combined. For the purposes of this assessment, moderate and major impacts will be deemed ‘significant’. Where significant environmental effects are identified, measures to mitigate these effects are proposed (where feasible) and remaining residual effects are identified.
- 10.3.13 A full explanation of the criteria used to assess sensitivity, magnitude of impact and classification of landscape effects is included in Appendix 10A (ES Volume III, Application Document Reference 6.4).

Visual Impact Methodology

- 10.3.14 The assessment of effects likely to result from visual impacts is structured by receptor groups (e.g., residents, users of recreational spaces, business users and motorists). Individual receptors are identified through the definition of the ZTV, within which views of the Proposed Development are likely to be possible. Individuals are subsequently categorised into receptor groups within different areas. The sensitivity of each receptor group is then evaluated as being high, medium or low through combination of the value of view and susceptibility of the receptor.
- 10.3.15 Views from each identified representative viewpoint are recorded, considering distance from the Site (as the crow flies), receptor type, value of view and a short description of the view.
- 10.3.16 For the purposes of assessment, the sensitivity of a receptor and the magnitude of an impact on that receptor are combined to determine the effect that the Proposed Development is predicted to have on existing baseline visual conditions for that given receptor. As previously described for the landscape impact assessment, specific terminology is used to describe the magnitude of impact (see Appendix 10A (ES Volume III, Application Document Reference 6.4) for details).
- 10.3.17 Although some visual receptors may consider the Proposed Development to be visually appealing or interesting, the assessment follows standard best practice methods, and therefore assumes a ‘worst case’ scenario, whereby significant changes to views as a result of new tall/ large structures or buildings in an existing relatively open area are generally considered to be adverse.

- 10.3.18 Viewpoint photography accompanying this assessment has been undertaken based upon the guidance given in Landscape Institute Advice Note 01/11 'Photography and photomontage in landscape and visual impact assessment (Ref 10-10).
- 10.3.19 The relationship between the sensitivity of receptors and the magnitude of impacts allows the effects to be classified. Diagram 10.1 below illustrates this relationship, and allows a relative level of significance of any predicted effects on visual receptors to be categorised.

Diagram 10.1: Classification of landscape and visual effects



- 10.3.20 For the purposes of this assessment, moderate and major impacts will be deemed 'significant' while minor and negligible impacts will be deemed 'not significant'. Where significant environmental effects are identified, measures to mitigate these effects are proposed and remaining residual effects are identified.

Extent of Study Area

- 10.3.21 The extent of the Study Area is determined by the potential visibility of the Proposed Development in the surrounding landscape and is proportionate to its size and scale and the nature of the surrounding landscape. Current guidance (Ref 10-8) states that the Study Area should include: "the full extent of the wider landscape around it which the proposed development may influence in a significant manner".

- 10.3.22 A ZTV with a 10 km boundary (Figure 10.1 ES Volume II, Application Document Reference 6.3) that encompasses heritage assets such as the mausoleum within Brocklesby Park was developed in response to the Scoping Opinion.
- 10.3.23 For the purposes of the visual assessment a 5 km Study Area has been defined by a combination of ZTV analysis, the extent of likely significant effects and professional judgement in line with comments received through consultation. Based upon the tallest element of the Proposed Development being the stack (with a height of up to 56 m AOD) it is considered that it is highly unlikely that significant visual effects will be possible from further than 5 km from the centre of the stack.
- 10.3.24 A separate Study Area is used for the landscape assessment as it is considered that it is unlikely that significant landscape effects will be possible further than 2 km from the centre of the stack, due to the similarity between the type of development proposed and existing development in the area; and the prominence of industry in the landscape character of the area surrounding the Site.

Sources of Information/Data

- 10.3.25 Baseline data has been gathered from a study of Ordnance Survey (OS) maps and aerial photographs, publicly available documents such as landscape character assessment documents from local authorities within the immediate area and national character mapping available from Natural England (Ref 10-11). Three site visits have been undertaken by the author of this report on 12 September 2018, 12 January 2019 and 5 April 2019. At the time of the initial site visit, the weather was cloudy with light rain and fog in the morning, quickly becoming dry and sunny as the clouds dispersed. During the second site visit the weather was dry and overcast. During the third site visit the weather was cold but dry and bright.

10.4 Consultation

- 10.4.1 As part of the ongoing Environmental Impact Assessment (EIA) and design development process, consultation was undertaken through a two-staged consultation process, as described in Chapter 1 (Introduction). Feedback has also been received through a Scoping Opinion received in July 2018.
- 10.4.2 Consultation has been undertaken with local authorities located within the visual assessment 5 km Study Area to agree the location of representative viewpoints. The consultation undertaken is set out in Table 10.1 and indicates how these have been addressed in this ES Chapter.

Table 10.1: Consultation summary

Consultee	Date (method of consultation)	Summary of consultee comments	Summary of response/ how comments have been addressed
Secretary of State	Scoping Opinion (July 2018)	<p>Photography should be used to inform the assessment.</p> <p>Photographs should be taken from the selected viewpoints and include the winter season.</p>	<p>Representative viewpoints were assessed with reference to photographs taken on 12 September 2018 and presented in Figures 10.5 to 10.12, ES Volume II (Application Document 6.3).</p> <p>Winter photographs were taken from each representative viewpoint on 5 April 2019 presented in Figures 10.13 to 10.20, ES Volume II (Application Document 6.3).</p>
		<p>Selected viewpoints should be agreed with relevant consultation bodies.</p>	<p>The location of Representative viewpoints was agreed with Lincolnshire County Council, Engie (North East Lincolnshire Council) and North Lincolnshire Council.</p>
Secretary of State	Scoping Opinion	<p>The Study Area should be determined based on the extent of the likely significant effects.</p>	<p>A 5 km Study Area for visual impacts was determined based on the tallest element of the Proposed Development being the stack at up to 56 m AOD and the likelihood that significant effects are unlikely beyond 5 km of the centre of the stack.</p> <p>A 2 km Study Area for Landscape effects was determined based on the location and geographical extent of the Proposed Development and the likelihood that significant effects are unlikely beyond 2 km from the Proposed OCGT Power Station Site.</p> <p>Representative viewpoints were selected at residential properties in the vicinity of Chase Hill Road, the town of Immingham; the Humber Estuary; and at Pelham's Pillar in Brocklesby Park.</p>
		<p>Sensitive receptors marginally outside of the Study Area should include residential properties at Chase Hill Road, the town of Immingham; users of the Humber Estuary; and Brocklesby Park, including Pelham's Pillar at Cabourne High Wood.</p>	<p>Viewpoints representative of visual receptors at Chase Hill Road, the town of Immingham, the Humber Estuary and Brocklesby Park including Pelham's Pillar were put forward for inclusion in the assessment.</p>

Consultee	Date (method of consultation)	Summary of consultee comments	Summary of response/ how comments have been addressed
		A detailed description of the methodology applied to the assessments should be included.	A detailed methodology is presented in Appendix 10A ES Volume III (Application Document 6.4). .
Secretary of State	Scoping Opinion	Any significant residual effects should be described.	Residual effects are described in section 11.11 Residual Effects and Conclusions.
		Where professional judgement has been used to determine significance this should be stated.	Significance has been determined in line with the methodology presented in Appendix 10A ES Volume III (Application Document 6.4).
		Any agreements reached with relevant consultation bodies regarding the assessment methodology should be recorded.	No comment was received from the LPA on the assessment methodology.
		Details of the design and materials used in new structures should be provided.	The DCO application will indicate the likely design and materials to be used with the aim of minimising the potential adverse environmental effects. These elements will be finalised at the detail design stage and approval sought from the LPA where applicable.
		An explanation of how the design and materials have been selected with the aim of minimising the potential adverse environmental effects should be given.	Design and materials are considered in section 11.7 Development Design and Impact Avoidance.
		<p>A description of the lighting scheme for the Proposed Development and an assessment of the effects of the proposed lighting on sensitive receptors should be provided.</p> <p>Any inter-relationships between the impacts of proposed lighting identified in the Landscape and Visual Amenity chapter and receptors for other aspects should be assessed, where significant effects are likely to occur.</p>	<p>The lighting scheme will be presented in a Lighting Strategy. An Indicative Lighting Strategy has been prepared to accompany the DCO Application. (Application Document Ref. 5.4)</p> <p>This will consider potential effects of the proposed lighting on sensitive receptors and how these effects will be minimised.</p> <p>The Environmental Statement will identify inter-relationships between the proposed lighting impacts in the Landscape and Visual Amenity aspect chapter and receptors for other aspects.</p>

Consultee	Date (method of consultation)	Summary of consultee comments	Summary of response/ how comments have been addressed
Lincolnshire County Council (LCC)	06/08/18 (Email)	Brockelsby area to be included as 20-30m higher than surrounding area.	A representative viewpoint in the Brocklesby area was identified, visited and considered as part of the assessment. A list of all the potential viewpoints is detailed within Appendix 10B (ES Volume III Application Document Ref. 6.4.) and illustrated on Figure 10.4 (ES Volume II, Application Document Ref. 6.3).
Engie (North East Lincolnshire Council (NELC))	01/08/18 (Email)	Proposed viewpoints deemed acceptable.	No action.
North Lincolnshire Council (NLC)	29/08/18 (Email)	Proposed viewpoints deemed acceptable. Setting and views of 2 listed lighthouses close to proposed viewpoint B and Thornton Abbey located to the north west of viewpoint I to be considered in the LVIA.	Representative viewpoint 2 listed in Table 10.3 and Appendix 10B (ES Volume II) and illustrated on Figure 10.4 (ES Volume II) considers the visual impact on receptors using the Public Right of Way (PRoW) near the lighthouses. Thornton Abbey has been discounted due to lack of visibility of the site and limited public access.
North Lincolnshire Council (NLC)	16/01/19 (Response to PEI Report)	A viewpoint from Thornton Abbey should be added within the final ES and the visual impact from this important site assessed.	An additional viewpoint (K) located at Thornton Abbey was visited and/is listed in Appendix 10B (ES Volume III (Application Document 6.4). and its location illustrated on Figure 10.4 (ES Volume II) . As a result of the lack of view of the Proposed Development, as illustrated within Appendix 10D (ES Volume III), the viewpoint was discounted.

10.5 Changes Since the Preliminary Environmental Information (PEI) Report

10.5.1 The changes in the Proposed Development since the publication of the PEI Report are presented in Chapter 4: Proposed Development. It is not considered that the changes described in that Chapter have any effect on this assessment.

10.6 Use of the Rochdale Envelope

10.6.1 A focussed use of the Rochdale Envelope approach has been adopted to present a worst case assessment of potential environmental effects of the different parameters of the Proposed Development that cannot yet be fixed. The parameters included within the Rochdale Envelope are described in Chapter 4: Proposed Development.

10.6.2 Changes within the parameters described are not considered to have any effect on this assessment.

10.7 Baseline Conditions

Existing Landscape Baseline

Landscape Characterisation

10.7.1 At a national scale the 2 km Study Area includes the National Character Area (NCA) Profile: 41 Humber Estuary (Ref 10-11) which covers the Site and the majority of the 2 km Study Area and NCA Profile: 42 Lincolnshire Coast and Marshes lies to the west of the 2 km Study Area as illustrated on Figure 10.2 (ES Volume II Application Document Ref. 6.3).

10.7.2 At the regional scale the greater part of the landscape assessment 2 km Study Area lies within North Lincolnshire and is characterised by the North Lincolnshire Landscape Character Assessment (NLLCA) (Ref 10-12). A smaller part is located within North East Lincolnshire and is characterised within the North East Lincolnshire Landscape Character Assessment, Sensitivity and Capacity Study (NELLCA) Ref (10-13).

National Landscape Characterisation

10.7.3 NCA 41: Humber Estuary is an open, low-lying flat landscape influenced by the changing character of the river. The area is characterised by arable farming in large regular fields on the reclaimed, formerly inter-tidal landscape. Internationally valuable habitats are in strong contrast to the urban and industrial landscape surrounding Hull, including the Humber Bridge, a strong link between the north and south banks of the Humber Estuary.

10.7.4 NCA 42: Lincolnshire Coast and Marshes lies south-east of Hull. This is an area of predominantly flat land, sparsely wooded with open views. The coastal strip has been developed during the 20th century as a tourist destination and larger settlements are located along the coast.

District/Regional Landscape Characterisation

North Lincolnshire Landscape Character Assessment (1999)

10.7.5 The Humber Estuary LCA covers a strip along the south bank of the estuary. This landscape is flat, expansive and low-lying, being characterised by arable fields, relatively sparse tree cover and urban and industrial complexes. Views of the Humber Estuary and

north shore are limited due to the visual obstruction caused by the flood defence embankment. High ground to the south and east of Barton upon Humber rises up to approximately 50 m AOD, enabling long distance views to the north bank of the estuary.

North East Lincolnshire Landscape Character Assessment (2010)

- 10.7.6 The LCA A Humber Estuary lies to the south east of the 2 km Study Area and is expansive, flat and low-lying comprising largely of industrial complexes and farmland. The simple landscape is characterised by large unbounded arable fields with industrial/urban and semi-natural habitat land uses providing local variety. Hedgerow and tree cover is limited, with occasional woodland blocks visually prominent and interrupting views. In many areas flood alleviation berms block views of the River Humber.

Local Landscape Characterisation

- 10.7.7 At the local level, landscape within the 2 km Study Area is characterised by the NLLCA and NELLCA.

North Lincolnshire Landscape Character Assessment (1999)

- 10.7.8 The NLLCA subdivides LCAs into Local Landscape Types (LLT). The 2 km Study Area includes the following LLT summarised below:

- Industrial Landscape – South Humber Bank;
- Open Undulating Farmland – South Killingholme; and
- Wooded Farmland – East Halton, North Killingholme.

Industrial Landscape – South Humber Bank LLT

- 10.7.9 This area lies on the 'South Bank' at the mouth of the Humber Estuary extending north from the North Lincolnshire boundary to Halton Marshes, lying east of South Killingholme. The Ulceby to Immingham railway bisects the area to the south. The key characteristics are described within the document as:

- *"Flat landscape gently undulating to the west;*
- *Land mainly developed for industry with pockets of flat reclaimed arable farmland plantation woodland and naturalised coastal habitats i.e. South Killingholme Haven;*
- *Large-scale massive structures, storage facilities, oil refineries, etc. give a sense of enclosure, limiting views. Elements combine to significantly degrade the surrounding rural landscape character;*
- *Lighthouses and concrete coastal defences prominent along the coast;*
- *Development has resulted in a relatively chaotic landscape lacking unity;*
- *Very strong vertical elements present in the form of chimneys, accentuated by rising steam;*
- *Urban elements such as fences and signs proliferate and cause clutter;*
- *industrial traffic such as large tankers and lorries are common and create noise; and*
- *'Green' elements are insignificant within the industrial landscape. Ornamental mitigation planting and amenity trees in grass verges are mostly out of scale with the*

industrial mass. A few overgrown hedges exist, possibly as small remnants of the previous landscape.”

Open Undulating Farmland – South Killingholme LLT

10.7.10 There are two areas of this LLT to the west of the 2 km Study Area (see Figure 10.2 ES Volume II Application Document Reference Ref. 6.3) These are characterised by:

- *“Gently undulating terrain dipping towards the Humber;*
- *South Killingholme nucleated on the A160 corridor with a few scattered farmsteads elsewhere;*
- *Some traditional farm buildings remain although large-scale sheds are common and intrusive;*
- *Large, intensive arable fields bounded by robust clipped hawthorn hedges although some discontinuous and degraded;*
- *Landscape is open and sometimes exposed due to the scarcity of woodland blocks. Trees are commonly grouped with farm buildings or occasionally as shelterbelts or present in hedgerows;*
- *Ditches are common and create strong linear features when associated with the roadside or field boundaries;*
- *The proliferation of urban elements such as fencing along field boundaries and signs are common; and*
- *Simple, peaceful landscape is interrupted by pylons, infrastructure and adjacent industry viewed in the distance.”*

10.7.11 Wooded Farmland – East Halton, North Killingholme LLT lies to the west of the 2 km Study Area in the area around North Killingholme, and is characterised by the following:

- *“Gently undulating well-treed terrain with pockets of arable farmland and small pockets of pasture;*
- *Tightly nucleated villages with architectural styles creating attractive street-scenes. Church steeples are prominent features;*
- *Strong rural character with brick buildings the local vernacular, occasionally with white render and with pantile or slate roofs;*
- *Semi-natural woodland of well-matured, predominantly broadleaved species;*
- *Close ecological and historic associations with mature tree groups, historic sites, irregular small fields with ‘ridge and furrow’, mixed hedges and field ponds as a remnant ancient landscape within an intensively farmed setting;*
- *Peaceful, attractive and unified character, with internal diversity and localised enclosure; and*
- *Views of chimneys from the power station in the distance detract from the rural village scene and transmission lines bisect the area.”*

North East Lincolnshire Landscape Character Assessment (2010)

10.7.12 The 2 km Study Area includes one Landscape Character Type (LCT) within the North East Lincolnshire section of the Humber Estuary.

Industrial Landscape LCT

10.7.13 This visually intrusive area stretches from the north-west of Grimsby up to and around Immingham. It is dominated by on-shore oil and gas refineries and other large scale industrial units and extends inland to the A180 (T). The key characteristics are described within the document as:

- *“Virtually flat landform emphasising large skies;*
- *Large scale industrial works (including Immingham power station) and docks;*
- *Medium to large scale open arable farmland;*
- *Open views sometimes interrupted by large scale built development;*
- *High and low voltage pylons criss-crossing the area have an urbanising effect;*
- *Network of busy roads including the main A180 transport route;*
- *Well established low cut native hedgerow field boundaries with hedgerow trees;*
- *Tall native hedgerows and mature trees along road corridor;*
- *Extensive network of field drainage dykes including several large named drains; and*
- *Immingham town, northern periphery of Grimsby, scattered farmsteads”.*

Vegetation and green infrastructure

10.7.14 Agricultural land occupies much of the 2 km Study Area and comprises arable crops, boundary hedgerows, hedgerow trees and moderately sized blocks of woodland. The wider agricultural landscape tends to consist of small to medium scale fields defined by well-established native hedgerows up to 4 m in height. Hedgerow trees are infrequent to the east with larger quantities near settlements at East Halton, North Killingholme and South Killingholme. Occasional woodland blocks are scattered through the landscape, the most significant of these being Burkinshaw’s Covert and Chase Hill Wood, 0.4 km and 1.7 km to the north west of the Site respectively, as illustrated on Figure 10.2 (ES Volume II Application Document Reference Ref 6.3).

10.7.15 Chapter 9 Ecology of this ES contains a more full description of vegetation contained within the Site.

Topography

10.7.16 The Site lies at approximately 4.0 to 6.0 m AOD. The wider landscape of the 2 km Study Area is predominantly flat and low lying, being between 4 and 15 m AOD, with the land rising slightly to the west. Localised areas of high ground rising to around 20 m AOD lie within areas around North and south Killingholme.

Settlement and Land Use

10.7.17 Immingham is the largest settlement in the area and lies outside the 2 km Study Area approximately 2.4 km to the south-east. The settlement pattern within the 2 km Study Area comprises small and medium sized villages including; East Halton which is located to the north-west, North Killingholme and South Killingholme to the west. Isolated properties and farmsteads are scattered throughout the 2 km Study Area.

- 10.7.18 The landscape context of the 2 km Study Area comprises large scale industrial and dock related developments, scattered areas of residential and commercial development, small woodland blocks and arable farmland.
- 10.7.19 The large industrial complexes of the Existing VPI CHP Plant, Lindsey Oil Refinery, Humber Refinery and Killingholme Power Stations lie within the 2 km Study Area.
- 10.7.20 To the north-east of the Site a wedge of screening woodland comprising Chase Hill Wood and Burkinshaw's Covert extends alongside the west of Rosper Road. Beyond Rosper Road to the north-east of the site, the Humber Sea Terminal site occupies a large area with arable farmland located further south. To the south-east of the site, Immingham Dock occupies a large part of the 2 km Study Area with unmanaged land nearer the Site.

Roads, Public Rights of Way and Access

- 10.7.21 The A180 is the main transport corridor connecting Immingham and Grimsby to the wider transport network. It is located approximately 3.2 km to the south of the Site. A comprehensive network of B roads connecting small villages cross the wider area.
- 10.7.22 Public Rights of Way (PRoW) are generally located to the western and eastern boundaries of the 2 km Study Area. To the west, short footpaths radiate from South Killingholme including footpaths NKIL 85, SKIL 87A1, SKIL 85, SKIL 91B, SKIL 99, SKIL 87A2 and SKIL 89. Further PRoW radiate from North Killingholme including NKIL 84, NKIL 84A and bridleway NKIL 83. A long distance route, the Nev Cole Way runs north to south along numerous PRoW between East Halton and Immingham.
- 10.7.23 To the east, NKIL 50 and KIL 50 run north to south along the coastline with SKIL 100 extending westwards along Marsh Lane to Rosper Road. SKIL 91A runs along the southern boundary of the Existing VPI CHP Plant Site.

The Site and its Immediate Setting

- 10.7.24 The location of the Site is illustrated on Figure 1.1 (ES Volume II Application Document Ref 6.3).
- 10.7.25 The north-west boundary of the Site abuts the Lindsey Oil Refinery main access road, the north-east boundary is defined by Rosper Road, whilst the south-east boundary abuts the Existing VPI CHP power station and the south-west boundary passes through an area of unmanaged land.
- 10.7.26 Agricultural fields within the landscape context of the Site are rectilinear and vary in size, tending to have large, well established hedgerows.
- 10.7.27 The Site comprises unmanaged land characterised by rough grassland with sparse shrubs, and hard standing providing car parking. There are no features of landscape importance within the Site.

Value of the Landscape Receptor

- 10.7.28 The 2 km Study Area does not contain land covered by a national or local landscape designation.
- 10.7.29 The Proposed Development is not located within any national or local landscape designations. It lies some 29 km from the Lincolnshire Wolds Area of Outstanding Natural

Beauty (AONB) to the south of the Site, 5 km from Brocklesby Registered Park and Garden (RPG) to the south west and 14 km from the People's Park RPG to the south east in Grimsby.

10.7.30 These designations are unlikely to be significantly affected by the Proposed Development owing to distance, together with intervening vegetation and built form, and therefore are not considered further within this assessment.

10.7.31 Table 10.2 below describes the factors relating to the value of the landscape at the Site and 2 km Study Area scale.

Table 10.2: Non-landscape designated areas/ features

Factor	2 km Study Area	Site
Landscape quality (condition)	The landscape of the 2 km Study Area comprises open, low lying agricultural land and industry, power stations, pylons and transport routes.	The Site's land-use is typical of the immediate area and the wider 2 km Study Area.
Scenic quality	The 2 km Study Area is low lying allowing long distance views across the predominantly agricultural landscape. Large and tall structures such as stacks and high voltage pylons associated with infrastructure are widely visible across much of the 2 km Study Area.	The Site has no scenic quality due to its current use and adjoining land uses.
Rarity	The landscape of the 2 km Study Area is typical of the wider landscape context regionally.	The Site contains no rare elements or features.
Representativeness	The 2 km Study Area does not contain elements or characteristics that are particularly important.	The Site does not contain elements or characteristics that are particularly important.
Conservation interests	The 2 km Study Area contains scheduled monuments and listed buildings (as set out in more detail in Chapter 13 Cultural Heritage).	The Site contains no elements or features of conservation interest.
Recreation value	Taken as a whole, the landscape of the 2 km Study Area is of some recreational value, restricted mainly to the use of the Nev Cole Way and PRoWs.	The Site has no public access and has no recreational value.
Perceptual aspects	The 2 km Study Area contains a number of areas which can be regarded as tranquil and remote. However, access tends to be limited to PRoWs and minor local roads.	The Site does not contain areas that can be regarded as tranquil due to the scale of adjoining industrial structures and their nature.
Landscape value as defined in Appendix 10A (ES Volume III Application Document Ref. 6.4).	Medium The 2 km Study Area includes a number of areas designated locally for their landscape character and/or perceptual qualities/tranquility, whilst being heavily influenced by industrial developments and transport corridors.	Low The Site is an area of previously developed land with no important landscape features.

- 10.7.32 The sensitivity of the landscape receptor is derived from the overall landscape value established in Table 10.2 and the susceptibility of the landscape receptor established in Table 10.5.
- 10.7.33 A full explanation of the criteria used to assess sensitivity, magnitude of impact and classification of landscape effects is included in Appendix 10A (ES Volume III Application Document Reference 6.4).

Overall Character and Key Characteristics of the 2 km Study Area

- 10.7.34 The topography of the 2 km Study Area is a considerable factor in defining the character of the area with the relatively flat landscape enabling wide, open and often long distance views across the 2 km Study Area.
- 10.7.35 The published landscape character assessments, including Humber Estuary (NCA 41), recognise that there are strong contrasts within the landscape. Tranquil, open and expansive areas dominated by farming contrast with large towns such as Immingham, and the industrial complexes along the estuary itself.
- 10.7.36 The North East Lincolnshire (NEL) Landscape Character Assessment, prepared in 2010, identifies one Local Landscape Type in the 2 km Study Area. This was refined slightly and re-named in the 2015 NEL Landscape Character Assessment, Sensitivity and Capacity Study:
- Landscape Type 1: Industrial Landscape.

Existing Visual Baseline

Visual Receptors

- 10.7.37 In order to identify locations with potential to have views of the Proposed Development, a ZTV has been produced. This identifies those areas which have potential for views of the Proposed Development and to what extent it is likely to be visible. The ZTV is illustrated in Figure 10.1 (ES Volume II Application Document Reference 6.3).
- 10.7.38 Visual receptors including residential areas, PRoW, and road users are shown on Figure 10.3 (ES Volume II Application Document Ref 6.3).
- 10.7.39 Residential receptors: Within the 5 km Study Area there are a number of residential settlements that experience views towards the Site. Views northwards from Immingham are largely contained by built form and vegetation with occasional glimpses between buildings and/or along roads. The peripheries of the surrounding rural villages experience a range of views towards the Site. The nature of views towards the Site from these villages range from open and uninterrupted to partially filtered by vegetation and the existing large-scale developments of the Existing VPI CHP Plant, Lindsey Oil Refinery and Humber Refinery. Other residential settlements within the visual assessment 5 km Study Area include: Goxhill, East Halton, North Killingholme, Ulceby and South Killingholme.
- 10.7.40 Recreational routes and PRoW: There are a number of PRoW and recreational trails within the 5 km Study Area where views of the landscape are likely to be an important part of the experience. These are generally located to the western and eastern boundaries of the 5 km Study Area. To the west, footpaths extend from South Killingholme and cluster

around Holton Farm south of the village. Further PRoW extend from North Killingholme and a long distance route, the Nev Cole way runs north to south along numerous PRoW between East Halton and Immingham.

- 10.7.41 To the east, a footpath runs north to south along the coastline with other extending westwards along Marsh Lane to Rosper Road and along the southern boundary of the Existing VPI CHP Plant Site.
- 10.7.42 Road Users: These receptors experience a dynamic range of views towards the Proposed Development to varying degrees dependant on intervening structures, screening vegetation, elevation and direction of travel. A series of local roads link the network of rural villages whilst major routes include the A160 and A180.

ZTV Analysis

- 10.7.43 A ZTV has been prepared for the Proposed Development based upon the tallest structure, i.e. the stack, at up to 56 m AOD, considering theoretical visibility of the Proposed Development.
- 10.7.44 The ZTV has been generated by analysis of a 3D digital terrain model (DTM) of the surrounding terrain and the Proposed Development. Significant built structures located within the Existing VPI CHP Plant Site were modelled at their actual heights, other significant built form was modelled at 7.5 m in height and large areas of mature woodland were modelled at 15 m in height to provide a more accurate ZTV than a bare-ground scenario (which does not take into account localised screening effects of vegetation and built form). The output provides a graphical representation of the computer calculated inter-visibility between a viewer (at 1.5 m height) and the Proposed Development (stack).
- 10.7.45 Potential viewpoints and receptors were identified throughout the 5 km Study Area. The potential receptors and their existing views are described in Appendix 10B (ES Volume III Application Document Ref 6.4) and located on Appendix 10C (ES Volume III).
- 10.7.46 The ZTV illustrates that theoretical visibility of the Proposed Development is intermittent across the 5km Study Area primarily due to woodland blocks located on the edges of industrial developments. Built form distributed throughout the 5 km Study Area also reduces visibility of the Proposed Development.

Representative Viewpoints

- 10.7.47 A total of ten viewpoints were initially proposed (listed in Appendix 10B and shown on Appendix 10C ES Volume III and Figure 10.4 ES Volume II Application Document Ref 6.3). These viewpoints were consulted on with Lincolnshire County Council, North East Lincolnshire Council and North Lincolnshire Council. Subsequently three viewpoints were discounted due to lack of intervisibility. As a result of consultation as detailed in Table 10.1 'Consultation summary', two additional viewpoints were visited: viewpoint K at Thornton Abbey and Viewpoint L at PRoW Broc 5/1. Viewpoint L in the Brockelsby area was taken forward for assessment (representative viewpoint 8). Viewpoint K at Thornton Abbey and Gatehouse was discounted due to lack of view of the Proposed Development.
- 10.7.48 The representative viewpoints have been chosen to illustrate the typical range of views of the Proposed Development from within the 5km Study Area as experienced from settlements, publicly accessible roads, and PRoW towards the Proposed Development. These representative viewpoints are described in the table below and their location illustrated on Figure 10.4 Viewpoint Location Plan. Photographs of the view from each

representative viewpoint are presented within Figures 10.5 to 10.27 (ES Volume II Application Document Reference 6.3).

Table 10.3: Representative viewpoints

Representative Viewpoint	OS Grid Reference	Receptor Location	Receptor Type	Description of view
1	TA 14115 20314	PRoW EHAL 74	Users of PRoW	<p>View from the PRoW, looking south-east. Partially open view, contained by boundary vegetation to the right of the view, across arable farmland. In the middle distance, intervening hedgerow and hedgerow trees partially obscure the refineries in the far distance. Uppermost parts of structures and stacks within the Humber Refinery, Lindsey Oil refinery and the Existing VPI CHP Plant Site are visible on the horizon, viewed against the skyline.</p> <p>This is not a view of any recognised quality with a number of detracting features within the background of the view and therefore value is considered to be Low.</p>
2	TA 17774 18506	PRoW NKIL 50	Users of PRoW and residents of the lighthouse	<p>View south-west from the PRoW. Relatively expansive view over arable farmland, although localised mounding at the Phillips 66 gas storage facility to the left of the view screens views further south. Large scale industrial development at Humber Refinery, Lindsey Oil Refinery and the Existing VPI CHP Plant Site are clearly visible within the middle distance and extending across a large proportion of the view, forming the majority of the skyline. Intermittent native hedgerow and trees along nearby roads partially obscure lower parts of the industrial structures. Alternative views across the Humber Estuary are the focus for receptors at this location.</p> <p>Undesignated landscape combined with detracting features in the view. The value of this view is considered to be Low.</p>
3	TA 23491 18863	PRoW Paul Footpath No. 6	Users of PRoW	<p>View west across the Humber Estuary from the PRoW. Wide, open, expansive view across the Humber Estuary. The view is panoramic with industrial structures and flare stacks contained within a portion of the skyline on the south bank, in contrast to the surrounding flat landscape. There are alternative views that do not include industrial development on the south bank.</p> <p>Locally valued view with minimal detractors. Medium value.</p>

Representative Viewpoint	OS Grid Reference	Receptor Location	Receptor Type	Description of view
4	TA 18293 15127	Woodlands Avenue	Residents	<p>View from Woodlands Avenue. Residential properties in the foreground and along the road frame the narrow view. Large scale industrial development is glimpsed in the middle to far distance at the end of the road. A stack within the Existing VPI CHP Plant Site on the skyline.</p> <p>This is not of any recognised quality with a number of detracting elements. Value is considered to be Low.</p>
5	TA 14663 14274	PRoW	Users of PRoW	<p>View north-east from the PRoW. Open view across flat arable farmland. Field boundary vegetation largely obscures lower parts of the industrial structures in the far distance. Large scale industrial development at Humber Refinery, Lindsey Oil Refinery and Existing VPI CHP Plant Site defines the skyline in the middle distance and extending across a large proportion of the view.</p> <p>Well composed view that contains a number of detractors, considered to be Low in value.</p>
6	TA 15135 16409	Staple Road, South Killingholme	Residents	<p>View east from Staple Road. View across arable farmland with the Humber Refinery and Lindsey Oil Refinery visible in the middle distance. Trees along Staple Road effectively screen the view to the right with hedgerow to the left containing the view to the north. In the near distance bounding hedgerow and trees, buildings within the Scangrit site and vegetation along Eastfield Road partially screen low level buildings and lower parts of structures within the refineries from view. Stacks and taller structures are prominent on the skyline.</p> <p>This is a view without recognised quality and includes a number of detracting features. The value of the view is considered to be Low.</p>
7	TA 14773 17313	PRoW NKIL 83 Church Lane, North Killingholme	Users of PRoW and residents	<p>View east from Church Lane. The partially open view includes Church Lane, roadside hedgerow alongside in the foreground and arable farmland beyond. Roadside hedgerow effectively screens low level buildings and lower parts of structures in the background from view. Stacks and taller structures are prominent within Humber Refinery and Lindsey Oil Refinery visible on the skyline.</p> <p>The view has no recognised quality and includes a number of detracting features. The value of the view is considered to be Low.</p>

Representative Viewpoint	OS Grid Reference	Receptor Location	Receptor Type	Description of view
8	TA 14427 11198	PRoW Broc 5/1	Users of PRoW	<p>View north-east from the PRoW. Wide, expansive view over flat arable farmland in the foreground. In the middle distance intervening hedgerow and isolated trees effectively screen low level buildings and lower parts of structures within the Humber Refinery and Lindsey Oil Refinery from view. Stacks within the refineries in the far distance partially define the skyline in combination with pylons that extend across a large portion of the horizon.</p> <p>The view has no recognised quality and includes a number of detracting features. The value of the view is considered to be Low.</p>

Future Baseline

10.7.49 As part of the future baseline scenario at 2019-2022 in the absence of the Proposed Development, it is predicted that small amounts of development within existing settlement boundaries would have been constructed, but the general landscape character and features would remain in a similar condition as they are now. An assessment of the effects resulting from the Proposed Development and other developments identified as having the potential for significant effects is provided in Chapter 17 Cumulative and Combined Effects.

10.8 Development Design and Impact Avoidance

10.8.1 The following impact avoidance measures will either be incorporated into the design or are standard construction or operational methods. These measures have therefore been taken into account during the EIA process described in this chapter:

- Suitable materials will be used, where possible, in the construction of structures to reduce reflection and glare and to assist with breaking up the massing of the buildings and structures;
- The selection of finishes for the buildings and other infrastructure will be informed by the finishes of the adjacent developments and will be developed in consultation with North Lincolnshire Council in order to minimise the visual impact of the Proposed Development; and
- Lighting required during the construction and operation stages of the Proposed Development will be designed to reduce unnecessary light spill outside of the Site boundary. A lighting strategy will cover this aspect. An Indicative Lighting Strategy is included with the DCO Application (Application Document Ref. 5.4).

10.9 Likely Impacts and Effects

10.9.1 To avoid unnecessary repetition, this section of this chapter presents landscape impacts and effects in Table 10.4 for both construction and operational impacts and summarised in Table 10.5 followed by visual impacts and effects in Table 10.6 for both construction and operational impacts and summarised in Table 10.7. It is anticipated that effects at opening would be similar to those at operation, and that effects at decommissioning would be similar to those at construction, and would result in a neutral effect on both landscape character and visual amenity once structures comprising the Proposed Development are removed.

10.9.2 The assessment has adopted the principles of the 'Rochdale Envelope'. As such the landscape and visual assessment is based on the maximum extent of the Proposed Development. The Proposed Development would introduce a number of new and large scale elements into the landscape, creating the potential for landscape or visual effects. The potential impacts relate to the loss of existing landscape features and the visibility of new features associated with the Proposed Development, including how this affects perceptual qualities of the landscape and visual amenity. The type and duration of the landscape and visual effects fall within three main stages as follows:-

Temporary Construction Impacts

10.9.3 The potential for temporary impacts on the landscape and visual resource within the 2 km and 5 km Study Areas may arise from:

- Construction of the Proposed Development on the landscape resource within the Site;
- Potential effects to landscape character or visual amenity within the wider area as a result of visibility of construction activities or the Proposed Development during construction;
- Topsoil stripping and vegetation clearance;
- Stockpiling of materials;
- Security fencing (e.g. Heras or similar) to secure the construction site;
- Temporary lighting;
- Site welfare and security facilities; and
- The presence and storage of temporary site infrastructure such as site traffic, cranes, construction compounds and use of machinery.

Landscape

10.9.4 The potential landscape impacts of the Proposed Development relate to the loss of existing landscape features and the visibility of new landscape features (temporary and permanent), including how this affects the perceptual qualities and tranquillity of a character area. In the case of the construction of the Proposed Development this will relate to the following:

- Movement of plant and heavy goods vehicles, both on site and in the surrounding area;
- Temporary stockpiling of earth and storage of materials on site;
- Establishment of site compounds resulting in temporary structures to serve the workforce;
- Crane activity to assist high level construction works;
- Building construction including the new stack; and
- External lighting to illuminate site operations after dark.

10.9.5 In the case of the operational phase of the Proposed Development, this will relate to the introduction of permanent large scale structures including a stack and turbine hall within the Site. The plant due to the nature of its operation will not give rise to visible plumes; there is no wet cooling system employed.

Impacts on Overall Character and Key Characteristics of the 2 km Study Area

10.9.6 The topography of the 2 km Study Area is a considerable factor in defining the character of the area with the relatively flat landscape enabling wide, open and often long distance views across the 2 km Study Area.

10.9.7 The published landscape character assessments recognise industrial development as a characteristic element of the landscape; as such it is considered that the construction of the Proposed Development would not introduce any uncharacteristic landscape elements to the 2 km Study Area.

10.9.8 The large scale industrial buildings / structures and transport corridors located within the 2 km Study Area are also recognised as characteristic features in the landscape within the relevant published landscape character assessments.

Impacts on Specific Aesthetic or Perceptual Aspects

10.9.9 Large scale industry and power generation is a well-established land-use within the 2 km Study Area and within the landscape immediately adjacent to the Site. Although relatively visible within the more remote areas of the 2 km Study Area, it is anticipated that the presence of the Proposed Development will not affect the aesthetic and perceptual qualities of the local landscape.

10.9.10 During construction there would be changes in the aesthetic and perceptual qualities through the movement of plant within close proximity to the Site and the introduction of large scale structures in various stages of development. At operation, the aesthetic and perceptual qualities would remain as present with large scale static structures characteristic of the wider landscape.

Assessment of Landscape Effects

Table 10.4: Assessment of Landscape Effects

NCA 41: Humber Estuary	
Landscape Value	Low
Susceptibility	As a result of the low-lying, relatively flat landscape and presence of major energy infrastructure this NCA does offer some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	
The Proposed Development would introduce construction activity to the NCA with resulting direct effects. An observable, localised change in landscape character would occur. Due to the large scale of the NCA in relation to the scale of the Site, construction activities would result in temporary perceptible impacts. A very low magnitude of impact would result that in combination with the low sensitivity of the NCA, would have a negligible adverse effect overall.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Description of impact at Operation	
Operation of the Proposed Development would extend the presence of large scale industrial built form that is similar in form and scale to that of the existing Existing VPI CHP Plant and the refineries. Due to the large scale and industrial characteristics of the NCA, effects on its overall character would be minimal. Impacts would be direct, reversible and long term, with a very low magnitude. Due to the large scale and industrial characteristics of the NCA, effects on its overall character would be negligible adverse.	

Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
NCA 42: Lincolnshire Coast and Marshes	
Landscape Value	Low
Susceptibility	The combination of low-lying, relatively flat landscape and the strong visual presence of major energy infrastructure near to the eastern boundary results in this NCA having some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	
Located to the western periphery of the 2 km Study Area, NCA 42 would experience increased construction traffic associated with construction of the Proposed Development. This indirect impact would be temporary and short term, occurring over a small proportion of the NCA, with a very low magnitude. Resulting effects on landscape character would be temporary and small scale. In combination with the large scale of the NCA in relation to the scale of these impacts, effects would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Description of impact at Operation	
Impacts at operation would remain similar to those at construction due to the distance of the NCA from the Proposed Development. Small scale, indirect impacts resulting from increased traffic would remain at a similar level to that seen construction and have a very low magnitude. Resultant effects on landscape character would remain negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Humber Estuary LCA	
Landscape Value	Low
Susceptibility	As a result of the low-lying, relatively flat landscape and presence of major energy infrastructure this LCA does offer some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	

<p>Construction of the Proposed Development would require introduction of construction compounds and laydown areas, machinery and other related activities to the LCA. Sensitivity is low due to the localised influence of the Existing VPI CHP Plant Site and refineries on the condition and quality of the area. As such, impacts would be direct, temporary and small scale, with a low magnitude. Minor adverse effects due to construction activities would result.</p>	
Predicted magnitude of impact	Low
Significance of Effect	Minor adverse (not significant)
Description of impact at Operation	
<p>The Proposed Development would extend built structures similar in form and scale to those at the Existing VPI CHP Plant Site and the refineries. Impacts on landscape character would be direct, long term and reversible. Resulting effects would be minor adverse.</p>	
Predicted magnitude of impact	Low
Significance of Effect	Minor adverse (not significant)
LCA A Humber Estuary	
Landscape Value	Low
Susceptibility	Due to the low-lying, relatively flat landscape and presence of large scale industrial land use, this LCA does offer some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	
<p>Construction activities would introduce construction compounds and laydown areas, machinery and other related activities to LCA A. The progressive construction of large scale buildings would take place in an area characterised by industrial development. Low sensitivity due to the localised influence of the Existing VPI CHP Plant Site and refineries on the condition and quality of the area, impacts due to construction activities would be direct, short term, temporary and small scale, resulting in minor adverse effects on landscape character.</p>	
Predicted magnitude of impact	Low
Significance of Effect	Minor adverse (not significant)
Description of impact at Operation	
<p>The operational Proposed Development would extend built structures similar in form and scale to those at the existing CHP plant. Due to the localised influence of the existing plant on the condition and quality of the wider LCA, sensitivity is low. Impacts would be direct, long term and reversible, with a low magnitude. Resulting effects on landscape character would be minor adverse.</p>	

Predicted magnitude of impact	Low
Significance of Effect	Minor adverse (not significant)
Industrial Landscape – South Humber Bank LLT	
Landscape Value	Low
Susceptibility	As a result of the low-lying, relatively flat landscape and presence of major energy infrastructure this LLT does offer some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	
Construction activities would introduce construction compounds and laydown areas, machinery and other related activities to the LLT. Sensitivity is assessed as low due to the localised influence of the existing VPI CHP Plant Site and refineries on the condition and quality of the area. Impacts on the landscape character would be direct, short term and temporary, with a low magnitude. Resulting effects on landscape character would be minor adverse.	
Predicted magnitude of impact	Low
Significance of Effect	Minor adverse (not significant)
Description of impact at Operation	
Operation of the Proposed Development would result in impacts similar to those at construction. Impacts on the landscape character would be direct, short term and temporary, with a low magnitude. Resulting effects on landscape character would be minor adverse.	
Predicted magnitude of impact	Low
Significance of Effect	Minor adverse (not significant)
Open Undulating Farmland – South Killingholme LLT	
Landscape Value	Low
Susceptibility	As a result of the low-lying, relatively flat landscape and the presence of major energy infrastructure adjoining this LLT, there is some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium

Description of impact at Construction	
Due to the location of the LLT, direct impacts on the landscape character as a result of construction of the Proposed Development would be very low in magnitude. Resulting effects on landscape character would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Description of impact at Operation	
Operation of the Proposed Development would result in impacts on the LLT similar to those observed at construction. Resultant effects on landscape character would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Wooded Farmland – East Halton, North Killingholme LLT	
Landscape Value	Low
Susceptibility	Due to the low-lying, relatively flat landscape and the presence of major energy infrastructure nearby, this LLT does offer some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	
Due to the location of the LLT, indirect impacts on the landscape character of the LLT due to construction activities would be very low in magnitude. Resulting effects on landscape character would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Description of impact at Operation	
Operation of the Proposed Development would result in impacts on the LLT similar to those observed at construction. Resultant effects on landscape character would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)

Industrial Landscape LCT	
Landscape Value	Low
Susceptibility	The low-lying, relatively flat landscape and areas of large scale industrial land use means that this LCT does offer some capacity to absorb the type of development proposed. Susceptibility to change is therefore considered to be medium.
Sensitivity of receptor	Medium
Description of impact at Construction	
Due to the location of the LCT, direct and indirect impacts on the landscape character of the LLT due to construction activities would be very low in magnitude. Resulting effects on landscape character would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)
Description of impact at Operation	
Operation of the Proposed Development would result in impacts on the LCT similar to those observed at construction. Resultant effects on landscape character would be negligible adverse.	
Predicted magnitude of impact	Very low
Significance of Effect	Negligible adverse (not significant)

Table 10.5: Summary of Landscape Effects

Landscape type	Significance of effect	
	Construction	Operation
NCA 41: Humber Estuary	Negligible adverse (not significant)	Negligible adverse (not significant)
NCA 42: Lincolnshire Coast and Marshes	Negligible adverse (not significant)	Negligible adverse (not significant)
Humber Estuary LCA	Minor adverse (not significant)	Minor adverse (not significant)
LCA A Humber Estuary	Minor adverse (not significant)	Minor adverse (not significant)
Industrial Landscape – South Humber Bank LLT	Minor adverse (not significant)	Minor adverse (not significant)
Open Undulating Farmland – South Killingholme LLT	Negligible adverse (not significant)	Negligible adverse (not significant)
Wooded Farmland – East Halton, North Killingholme LLT	Negligible adverse (not significant)	Negligible adverse (not significant)
Industrial Landscape LCT	Negligible adverse (not significant)	Negligible adverse (not significant)

Assessment of Visual Effects

- 10.9.11 Potential visual effects of the Proposed Development in comparison with the future baseline visual context are considered in Table 10.6 by reference to representative viewpoints. The assessments contained within Table 10.6 should be read in conjunction with Figures 10.5 to 10.12(ES Volume II Application Document reference 6.3) which illustrate the baseline situation at each viewpoint during summer months and Figures 10.13 to 10.20 (ES Volume II) which illustrate the baseline situation at each viewpoint during winter months. A series of photomontages have been prepared (Figures 10.22 to 10.27 (ES Volume II)) which illustrate the likely visibility of the Proposed Development at three of the assessed viewpoints, using indicative design layouts. These viewpoints were chosen in consultation with LCC, NELC and NLC as a range of representative views of the Proposed Development and illustrate Operation (2022).
- 10.9.12 The assessment of effects during each assessment scenario is based on the future baseline conditions and the concurrent conditions of the Proposed Development.
- 10.9.13 The viewpoints that have been taken forward for assessment purposes are the views considered as the most representative of the range of potential views from the variety of visual receptors found within the 5 km Study Area (based on the degree of view of the Site, the receptors’ sensitivity and the nature of the view).
- 10.9.14 Views of the Proposed Development other than those assessed are acknowledged to exist, the viewpoints are not intended to provide an exhaustive or fully comprehensive

catalogue of views of the Site; rather they provide a representative sample for the purpose of the landscape and visual impact assessment.

10.9.15 Potential visual effects of the Proposed Development in comparison with the future baseline visual context are considered below by reference to the viewpoints.

10.9.16 The assessment of effects during the Construction and Operation assessment scenario is based on a comparison of the future baseline conditions against the conditions with the Proposed Development.

Table 10.6: Visual Impact Assessment

Viewpoint 1 - PRoW EHAL 74 (Figures 10.5 and 10.13)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 14115 20314	South-east	3.7	22.80	Users of PRoW EHAL 74
Value of view		The view is not widely recognised for its quality, but may be valued locally, with low visitor numbers: Medium		
Visual Susceptibility to Change		Medium		
Sensitivity of receptor		The view includes visual detractors on the skyline but is otherwise attractive and is locally valued: Medium		
Description of impact at Construction				
Views of ground level construction operations in the far distance would be obscured by intervening vegetation and built form. Views of construction activities at height would largely be obscured by intervening trees in the middle distance. Construction of the upper parts of the tallest structures, including stack, would be barely noticeable in the context of existing large scale structures within the oil refineries and high voltage pylons extending across the view. Visual impacts would be small in size, small in extent and temporary.				
Construction of the Proposed Development would be perceptible but the overall balance of industrial development and surrounding farmland would remain similar to baseline conditions. A very low magnitude impact would result with negligible adverse visual effects.				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>Views of ground level structures in the far distance would be obscured by intervening vegetation including isolated field trees in the near distance, and hedgerow and woodland in the middle to far distance. The proposed stack would be barely noticeable within the context of a flare stack and pylons extending across the view and existing stacks within the refineries beyond. Visual impacts would be small in size, small in extent, long-term and reversible.</p> <p>The introduction of the Proposed Development would be perceptible but the overall balance of industrial development and surrounding farmland would remain similar to baseline conditions. A very low magnitude impact would result with negligible adverse visual effects.</p>				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse		
Significance of effect		Not significant		
Viewpoint 2 - PRoW NKIL 50 (Figures 10.6 and 10.14)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 17774 18506	South-west	1.4	15.30	Users of PRoW NKIL 50, residents of the lighthouse
Value of view		The view has no recognised quality but may be valued locally. This location may be visited specifically to experience the alternative views available over the Humber Estuary: Medium		
Visual Susceptibility to Change		Users of the PRoW, residents at home: High		
Sensitivity of receptor		Views over the Humber Estuary contain visual detractors but are otherwise attractive while views towards the Proposed Development contain discordant features. Views may be recognised locally: Medium		
Description of impact at Construction				
<p>Views of ground level construction operations would be limited by intervening vegetation along roads, localised mounding within the Philips 66 gas storage facility and existing structures within the CHP plant. Construction of the proposed stack would be visible against the existing structures within the Humber Refinery. These would have a stronger visual presence on the skyline due to their scale and number in relation to the proposed construction operations. Visual impacts would be small in scale, small in extent and temporary.</p> <p>Construction of the Proposed Development would be noticeable but the overall balance of industrial development and surrounding farmland would remain similar to baseline conditions. A low magnitude impact would result with minor adverse visual effects.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>Views of ground level structures would be limited by intervening vegetation including hedgerow along nearby roads, localised mounding within the Philips 66 gas storage facility and existing structures within the existing CHP plant. The proposed stack would be visually assimilated into existing structures within the refineries behind, due to their scale and number. These industrial structures would remain a visual presence on the skyline. The balance of the view would remain similar to baseline conditions.</p> <p>Visual impacts would be small scale, negligible in extent, long-term and reversible. A low magnitude impact would result with minor adverse visual effects.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		
Viewpoint 3 – PRoW Paull Footpath No. 6 (Figures 10.7 and 10.15)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 23491 18863	West	6.8	11.60	PRoW Paull Footpath No. 6
Value of view		The view may be recognised locally quality and is likely to be visited specifically to experience the views available, but due to its location visitor numbers may be low: Medium		
Visual Susceptibility to Change		The PRoW is relatively remote and less used: Medium		
Sensitivity of receptor		An otherwise attractive view that includes unattractive features on the south bank of the Humber and is recognised locally: Medium		
Description of impact at Construction				
<p>Views of ground level construction operations in the far distance across the Humber estuary would be limited by distance and intervening vegetation on the south bank. Construction of taller structures within the Proposed Development would be barely perceptible against existing stacks and tall structures within the refineries on the skyline. Visual impacts would be small in scale, small in extent and temporary. Construction of the Proposed Development would barely be noticeable and the overall balance of industrial development and surrounding farmland would remain similar to baseline conditions.</p> <p>A low magnitude impact that would be small scale, negligible in extent, short-term and reversible would result, with minor adverse visual effects.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>Views of the Proposed Development would be limited by distance and intervening landscape elements including vegetation, localised mounding and existing structures within the existing CHP plant. The proposed stack would be seen against existing stacks and tall structures within the refineries and would be visually assimilated into them due to similar dimensions and form. The visual presence of industrial structures would be increased but would not extend further across the view, their overall contribution to the skyline remaining similar to baseline conditions.</p> <p>A low magnitude impact would result with minor adverse visual effects. Visual impacts would be small in scale, small in extent, long-term and reversible.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		
Viewpoint 4 - Woodlands Avenue (Figure 10.8s and 10.16)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 18293 15127	North	2.4	9.9	Residents on Woodlands Avenue
Value of view		Views from this location have no recognised quality and it is unlikely to be visited specifically to experience the views available: Low		
Visual Susceptibility to Change		Residents at home: High		
Sensitivity of receptor		The view is experienced by large numbers of people: High		
Description of impact at Construction				
<p>Views of ground level construction operations in the far distance would be obscured by intervening built form within Immingham and vegetation beyond. Views of construction activities at height would be partially obscured by intervening trees in the middle distance. Construction of the proposed stack would be clearly visible in the centre of the view and above the existing stack. Construction of the proposed stack would introduce a contrasting element at an oblique angle to residential properties that is prominent on the skyline. Visual impacts would be medium in scale, small in extent and temporary. A very low magnitude impact would result, with negligible adverse visual effects.</p>				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>The Proposed Development would be seen at an oblique angle in the far distance within a narrow view contained by houses along Woodlands Avenue. Built form in the near distance and vegetation beyond would obscure low level structures and the stack. The visual presence of industrial structures would remain similar to baseline conditions. Visual impacts would be small in scale, small in extent, long-term and reversible. A very low magnitude impact would result, with negligible adverse visual effects.</p>				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse		
Significance of effect		Not significant		
Viewpoint 5 – PRoW (Figures 10.9 and 10.17)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 14663 14274	North-east	1.2	17.10	Users of PRoW
Value of view		The view may be valued locally, but is not widely recognised for its quality and is likely to have low visitor numbers: Medium		
Visual Susceptibility to Change		Users of the PRoW, with low visitor numbers: Medium		
Sensitivity of receptor		An attractive view including some unattractive or discordant features, that is recognised locally: Medium		
Description of impact at Construction				
<p>Views of ground level construction operations in the far distance would largely be obscured by intervening boundary hedgerows in the middle distance. Construction of the upper parts of the stack would be barely noticeable in the context of existing stacks and tall structures within the refineries. Construction of the Proposed Development would be noticeable but the overall balance of industrial development would remain similar to baseline conditions Visual impacts would be small in scale, small in extent and temporary.</p> <p>A very low magnitude impact would be observed and resultant visual effects would be negligible adverse.</p>				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>Low level structures within the Proposed Development would be screened by intervening boundary hedgerow in the near distance. Viewed in the middle-far distance the proposed stack would be seen within the context of existing stacks and tall industrial structures. The proposed stack would be smaller than stacks and tall structures within view and would be assimilated into them due to their number, form and height. The Proposed Development would be noticeable but the overall balance of industrial development would remain similar to baseline conditions. Visual impacts would be small in size, small in extent, long-term and reversible.</p> <p>A very low magnitude impact would be observed and resultant visual effects would be negligible adverse.</p>				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse (not significant)		
Viewpoint 6 - Staple Road, South Killingholme (Figures 10.10 and 10.18)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 15135 16409	East	1.8	18.70	Residents on Staple Road, South Killingholme
Value of view		The view has no recognised quality and is unlikely to be visited specifically to experience the views available: Low		
Visual Susceptibility to Change		Residents at home: High		
Sensitivity of receptor		The view includes prominent visual detractors nearby: Medium		
Description of impact at Construction				
<p>Views of ground level construction operations would be obscured by boundary vegetation and structures at the Scangrit site in the near distance, intervening vegetation along Eastfield Road and buildings within Humber Refinery. Construction operations at height would be partially visible behind and above intervening vegetation and existing structures within the Humber Refinery site. Construction of the proposed stack would be perceptible on the skyline between existing stacks. Visual impacts would be small in size, small in extent and temporary.</p> <p>A low magnitude impact would result, with minor adverse visual effects.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>Proposed low level structures would largely be obscured by intervening trees and boundary hedgerow in the near distance at the Scangrit site and along Eastfield Road. Structures within the refinery sites beyond would also partially obscure the Proposed Development. The uppermost part of the proposed stack would be visible and would increase the visual presence of tall industrial structures. The proposed stack would be a new feature on the skyline but due to its low height relative to nearby stacks, the view would remain similar to baseline conditions. Visual impacts would be small in scale, small in extent, long-term and reversible.</p> <p>A low magnitude impact would be observed and resultant visual effects would be minor adverse.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		
Viewpoint 7 - PRoW NKIL 83 (Figures 10.11 and 10.19)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 14773 17313	East	1.7	23.40	Residential receptors on Church Lane, North Killingholme. Users of PRoW NKIL 83
Value of view		The view has no recognised quality and is unlikely to be visited specifically to experience the views available: Low		
Visual Susceptibility to Change		Users of the PRoW, residents at home: High		
Sensitivity of receptor		The view includes prominent visual detractors nearby: Medium		
Description of impact at Construction				
<p>Views of ground level construction operations in the near distance would be partially obscured by hedgerow along Church Lane and existing buildings within the refineries. Construction of the stack would be in view on the skyline due to visual separation from similar tall structures within the Humber Refinery and Lindsey Oil Refineries. Due to the low height of the proposed stack relative to nearby stacks, the view would remain similar to baseline conditions. Visual impacts would be small in scale, small in extent and temporary.</p> <p>A low magnitude impact would result, with minor adverse visual effects.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Not significant		

Description of impact at Operation				
<p>Roadside hedgerow along Church Lane in the foreground would partially obscure low level structures within the Proposed Development in the middle distance. Structures within the Humber and Lindsey Oil refineries would partially obscure the Proposed Development beyond. The proposed stack would be perceptible as a new feature on the skyline but would be smaller than the other stacks in view. Visual impacts would be small in scale, small in extent, long-term and reversible.</p> <p>A small magnitude impact would be observed and resultant visual effects would be minor adverse.</p>				
Predicted magnitude of impact		Low		
Classification of Effect		Minor adverse		
Significance of effect		Significant		
Viewpoint 8 - PRoW Broc 5/1 (Figures 10.12 and 10.20)				
OS Grid reference	Direction of view	Distance to site (km)	Height (m AOD)	Receptor
TA 14427 11198	North-east	4.5	38.50	Users of PRoW Broc 5/1
Value of view		The view has no recognised quality and is unlikely to be visited specifically to experience the views available: Low		
Visual Susceptibility to Change		Users of the PRoW, with low visitor numbers: Medium		
Sensitivity of receptor		An attractive view including some unattractive or discordant features, that is recognised locally: Medium		
Description of impact at Construction				
<p>Views of ground level construction operations in the far distance would be screened by intervening vegetation including boundary hedgerows and isolated trees in the middle distance. Construction of the upper parts of the stack would be in full view and visible in the context of existing stacks and tall structures within the refineries. These would be visible on the skyline due to their number and height. Construction of the proposed stack would be perceptible on the skyline but the overall balance of industrial development and surrounding farmland would remain similar to baseline conditions. Visual impacts would be small in size, small in extent and temporary.</p> <p>A very low magnitude impact would be observed and resultant visual effects would be negligible adverse.</p>				
Predicted magnitude of impact		Very low		
Classification of Effect		Negligible adverse		
Significance of effect		Not significant		

Description of impact at Operation	
<p>Intervening vegetation including hedgerow in the near distance, and isolated hedgerow trees beyond would screen low level structures within the Proposed Development in the far distance. The proposed stack would be barely perceptible on the skyline. The visual extent of industrial structures would not extend further across the view. Overall, visual changes due to the Proposed Development would be limited. Visual impacts would be small in size, small in extent, long-term and reversible.</p> <p>A very low magnitude impact would result and visual effects would be negligible adverse.</p>	
Predicted magnitude of impact	Very low
Classification of Effect	Negligible adverse
Significance of effect	Not significant

Table 10.7: Summary of Visual Effects

Receptor reference	Receptor location	Receptor type	Significance of effect	
			Construction	Operation
1	PRoW EHAL 74	Users of PRoW	Negligible adverse (not significant)	Negligible adverse (not significant)
2	PRoW NKIL 50	Users of PRoW	Minor adverse (not significant)	Minor adverse (not significant)
3	PRoW Paull Footpath No. 6	Users of PRoW	Minor adverse (not significant)	Minor adverse (not significant)
4	Woodlands Avenue	Residents	Negligible adverse (not significant)	Negligible adverse (not significant)
5	PRoW	Users of PRoW	Negligible adverse (not significant)	Negligible adverse (not significant)
6	Staple Road, South Killingholme	Residents	Minor adverse (not significant)	Minor adverse (not significant)
7	PRoW NKIL 83 / Church Lane, North Killingholme	Users of PRoW / Residents	Minor adverse (not significant)	Minor adverse (not significant)
8	PRoW Broc 5/1	Users of PRoW	Negligible adverse (not significant)	Negligible adverse (not significant)

10.10 Mitigation and Enhancement Measures

10.10.1 Section 2.65 of EN-2 (Ref 10-2) states that: "It is not possible to eliminate the visual impacts associated with a fossil fuel generating station. Mitigation is therefore to reduce

the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable”.

- 10.10.2 The assessment has not identified significant effects on landscape receptors.
- 10.10.3 The assessment has not identified significant visual effects for receptors at the representative viewpoints. As such, it is anticipated that standard construction practises already incorporated into the design would provide the best fit with the existing local landscape and minimise visual impact through appropriate choice of external finish and colour.
- 10.10.4 Enhancement in the form of hedge and tree planting to the periphery of the Site would assist in reducing the visibility of the Proposed Development from visual receptors to the east including those at viewpoint 2, and users of Rosper Road.

10.11 Limitations or Difficulties

- 10.11.1 The technical difficulties in or limitations of carrying out the landscape and visual assessment are detailed below.
- 10.11.2 The assessment of effects has been undertaken by a combination of desk and field survey. The assessment is based on the proposals described in Chapter 4: The Proposed Development.
- 10.11.3 In line with standard practice, the landscape assessment is based on published landscape character studies only and no additional landscape characterisation has been conducted as part of this assessment.
- 10.11.4 Assessment of visual impact through the use of representative viewpoints has been restricted by the limits of public access. In particular, it has not been possible to visit the upper storeys of residential properties or receptors identified in consultation at Pelham’s Pillar to accurately record the views available. Views of the Proposed Development other than those assessed are acknowledged to exist. The viewpoints are not intended to provide an exhaustive or fully comprehensive catalogue of views of the Proposed Development; rather they provide a representative sample for the purpose of the landscape and visual impact assessment. This is in line with normal EIA practice.
- 10.11.5 The ZTV is developed from a digitally created spatial model based on 2 m DTM Lidar data from data.Gov.uk; buildings outside of the Site were sourced from OS Vector Map District and modelled at 7.5 m high; woodland was sourced from National Forest Inventory 2015 and modelled at 15 m high. The stack was modelled at a height of 56 m AOD)and the eye height of the viewer at 7.5 m AOD. Additional vegetation has not been modelled and as such the actual extent of visibility is likely to be reduced particularly from hedgerow lined roads and routes.

10.12 Residual Effects and Conclusions

- 10.12.1 As there is no feasible additional landscape or visual mitigation within the Proposed Development which could further reduce the landscape and visual effects due to the height of the stack and the scale and mass of the Proposed Development. All effects described above are therefore residual.

10.12.2 No mitigation is required as identified effects are considered negligible adverse and not significant.

10.13 References

- Ref 10-1 Department for Energy and Climate Change (2011) National Policy Statement for Energy (EN-1)
- Ref 10-2 Department for Energy and Climate Change (2011) National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)
- Ref 10-3 Ministry of Housing, Communities and Local Government (2018) National Planning Policy Framework
- Ref 10-4 North Lincolnshire Council (2003) North Lincolnshire Local Plan
- Ref 10-5 North Lincolnshire Council (2011) North Lincolnshire Local Development Framework
- Ref 10-6 North Lincolnshire Council (2011) North Lincolnshire Core Strategy
- Ref 10-7 North East Lincolnshire Council (2018) North East Lincolnshire Local Plan
- Ref 10-8 Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, third edition
- Ref 10-9 Natural England (2014) An Approach to Landscape Character Assessment
- Ref 10-10 Landscape Institute (2011) Advice Note 01/11 Photography and photomontage in landscape and visual impact assessment
- Ref 10-11 Natural England (2013) National Character Area Profiles
- Ref 10-12 Estell Warren Landscape Architects for North Lincolnshire Council (1999) North Lincolnshire Landscape Character Assessment
- Ref 10-13 North East Lincolnshire Council (2010) North East Lincolnshire Landscape Character Assessment, Sensitivity and Capacity Study