

# Humber Zero Planning Statement

VPI Immingham LLP

Project number: 15862

March 2023

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## LIST OF ABBREVIATIONS

| Abbreviation    | Definition   |
|-----------------|--|
| ALC             | Agricultural Land Classification                       |
| BEIS            | Department for Business Energy and Industrial Strategy |
| CO <sub>2</sub> | Carbon Dioxide   |
| CCS             | Carbon Capture and Storage                             |
| CCUS            | Carbon Capture Usage and Storage                       |
| DAS             | Design and Access Statement                            |
| DPD             | Development Plan Documents                             |
| EIA             | Environmental Impact Assessment                        |
| EWP             | The Energy White Paper                                 |
| CHP             | Combined Heat and Power                                |
| FCC             | Fluid Catalytic Cracker                                |
| GHG             | Greenhouse Gas   |
| HELA            | Housing and Employment Land Allocations                |
| LDF             | Local Development Framework                            |
| LVIA            | Landscape and Visual Impact Assessment                 |
| MT              | Million tonnes   |
| MW              | Megawatt   |
| NLC             | North Lincolnshire Council                             |
| NPPF            | National Planning Policy Framework                     |
| NPPG            | National Planning Practice Guidance                    |
| NPS             | National Policy Statement                              |
| OCGT            | Open Cycle Gas Turbine                                 |
| PCCC            | Post Combustion Carbon Capture                         |
| RIGS            | Regionally Important Geological Sites                  |
| SAC             | Special Area of Conservation                           |
| SHB             | South Humber Bank                                      |
| SHBSES          | South Humber Bank Strategic Employment Site            |
| SCR             | Selective Catalytic Reduction                          |
| SPA             | Special Protection Area                                |
| SPD             | Supplementary Planning Document                        |

|             |                                     |
|-------------|-------------------------------------|
| <i>SSSI</i> | Site of Special Scientific Interest |
| <i>TCPA</i> | Town and Country Planning Act 1990  |
| <i>ZTV</i>  | Zone of Theoretical Visibility      |

## LIST OF TERMS

| <b>Term</b>                                     | <b>Definition</b>  |
|---|--|
| <i>The Applicant</i>                            | VPI Immingham Limited  |
| <i>The Applicants (for Humber Zero overall)</i> | Phillips 66 Limited and VPI Immingham LLP  |
| <i>Core Strategy</i>                            | North Lincolnshire Local Development Framework Core Strategy 2011  |
| <i>Local Plan</i>                               | North Lincolnshire Local Plan 2003   |
| <i>Emerging Local Plan</i>                      | North Lincolnshire Local Plan Publication Draft 2022   |
| <i>Proposed Development Site</i>                | Land at Rosper Road  |
| <i>The Site</i>                                 | The land required for the Proposed Development and enclosed by a red line in the Site Location Plan, comprising land at VPI Immingham CHP Plant, Rosper Road.  |
| <i>HLCPP</i>                                    | The Humber Low Carbon Pipelines Project, a CO <sub>2</sub> and hydrogen pipeline project being promoted by National Grid Ventures  |
| <i>Viking CCS Project</i>                       | Decarbonisation Partnership in the Humber Region focused on capturing, transporting and storing CO <sub>2</sub> emissions, to decarbonise industrial operations. Previously named 'V Net Zero Project' |
| <i>1990 Act</i>                                 | Town and Country Planning Act 1990   |

| <b>Revision</b> | <b>Description</b> | <b>Originated</b> | <b>Checked</b> | <b>Reviewed</b> | <b>Authorised</b> | <b>Date</b> |
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|                 |                    |                   |                |                 |                   |             |
|                 |                    |                   |                |                 |                   |             |

**DWD Job Number:** 15862

# 1.0 INTRODUCTION

## 1.1 Preamble

1.1.1 This Planning Statement has been prepared in support of an application for full planning permission ('the Application') submitted to North Lincolnshire Council (the 'Council') under the provisions of the Town and Country Planning Act 1990 (as amended) on behalf of VPI Immingham LLP (the 'Applicant').

## 1.2 Overview of the Proposed Development

1.2.1 The proposed development comprises a Post-Combustion Carbon Capture (PCC) Plant for the existing VPI Combined Heat and Power (CHP) Plant for two of the Gas Turbines (GTs) and the two auxiliary boilers (the 'Proposed Development'). Section 3 presents further information on the Proposed Development's characteristics.

1.2.2 For the avoidance of doubt, the 'Proposed Development' in this document corresponds precisely to the 'Proposed VPI Development' in the Humber Zero Environmental Statement, which reports on the findings of the combined Environmental Impact Assessment carried out for the 'Proposed VPI Development' and also the 'Proposed Phillips 66 Development'. The latter comprises a Post-Combustion Carbon Capture (PCC) Plant for the existing Fluid Catalytic Cracker stack at Phillips 66 Limited's Humber Refinery and is subject to a separate planning application promoted by Phillips 66 Limited.

1.2.3 The Proposed Development along with the Proposed Phillips 66 Development, together comprise the first phase of the Humber Zero project.

## 1.3 The Humber Zero Project

1.3.1 By 2050, the UK has committed to reducing carbon emissions to net zero. This can only be achieved by decarbonising existing industry effectively. Energy intensive industries account for more than 20% of the economy and 1 in 10 jobs in the Humber.

1.3.2 Humber Zero is a large-scale decarbonisation programme, being advanced in collaboration with the Applicant and Phillips 66 Limited, that aims to remove up to 8 million tonnes (MT) of atmospheric CO<sub>2</sub> emissions per annum from the Immingham industrial cluster by 2030 through the deployment of a number of technologies such as Carbon Capture, Utilisation and Storage (CCUS).

1.3.3 During the first phase of Humber Zero, the Proposed Development and the Phillips 66 PCC will remove 95% of CO<sub>2</sub> emissions (3.8 million tonnes of CO<sub>2</sub> per year) from two of the large industrial processes in the Humber cluster – the Humber Refinery's Fluid Catalytic Cracker (FCC) and the VPI Immingham Combined Heat and Power (CHP) Plant gas turbines 1 and 2 (GT1 and GT2). This represents a 19% reduction in the overall emissions from the Humber industrial cluster, which is the largest of industrial cluster in the UK comprising a mix of large energy users, heavy transport needs and port facilities.

1.3.4 Further information is available on the Humber Zero website, available at: <https://www.humberzero.co.uk/>

1.3.5 The CO<sub>2</sub> transportation network that the Proposed Development will connect into is also under development by others. There are two potential networks that the Proposed Development could be connected to: the proposed Viking Carbon Capture Storage (CCS) CO<sub>2</sub> transportation and storage network (promoted by Harbour Energy) which is anticipated to commence in the southern part of the VPI Site, or the East Coast Cluster Humber Low Carbon Pipelines (HLCP), also known as Zero Carbon Humber (promoted by National Grid Ventures). Both pipeline networks will run close to the VPI Immingham CHP Power Station Site and the decision as to which network will be connected in to initially will be made following Government funding announcements. It is likely that access to both transportation networks would be available in the long-term development of the networks.

## 1.4 Pre-Application Consultation

1.4.1 The Applicant has carried out a comprehensive pre-application community and stakeholder engagement exercise in respect of the 'Humber Zero' project, of which the Proposed Development forms a part of. The full details of the community and stakeholder consultation are appended to this planning application in a Consultation Report.

1.4.2 The community and stakeholder consultation took a two-stage approach between March and July 2022 during which a range of consultation methods were employed, including:

- Stage 1 – included briefing emails and a Humber Zero 'launch event' for key stakeholders.
- Stage 2 – formal public consultation period, from May to July 2022, which included newsletters to residents and businesses within the vicinity of the Proposed Development and Humber Zero, virtual consultation events and tools (including a Virtual Consultation Room [VCR]), face-to-face consultation events, and some press and social media coverage.

1.4.3 Consultees were able to provide comments and feedback via a feedback form (online, via Freepost or at the events) and via a project email address or verbally at various consultation events.

1.4.4 As set out in the Consultation Report, the vast majority of respondents supported the Proposed Development and the contribution of 'Humber Zero' and the contribution to achieving 'net zero'. A small number of respondents expressed scepticism about the benefits of the Proposed Development and future hydrogen phases of development, which are not within the scope of this phase or the planning application. Other themes raised by respondents included querying the benefits and disbenefits of the project; the consultation process; amenity and health impacts to nearby residents, including noise, visual and air quality impacts; environmental risks and standards; traffic generation during construction and operation; and queries about the future hydrogen phases of the project and nearby projects within the Humber region, particularly the Viking CCS Pipeline.

1.4.5 The Applicant has considered the points raised during the consultation period. In response to the consultation feedback, further community consultation was undertaken by means of additional social media posts and one additional in-person community consultation event at South Killingholme. The remaining comments that were raised are generally high-level in nature and

have not resulted in amendments to the planning application in the early design phase. As detailed design stages progress, the consultation feedback will be considered, and any amendments needed would be made at this time.

## 1.5 Environmental Impact Assessment

- 1.5.1 The 2017 Town and Country Planning (Environmental Impact Assessment) Regulations (as amended) (EIA Regulations) apply to applications for planning permission under the 1990 Town and Country Planning Act.
- 1.5.2 The Applicant submitted a request for an Environmental Impact Assessment ('EIA') Scoping Opinion, including a 'Humber Zero EIA Scoping Report', to the Council on 25th January 2022. The Council issued its Scoping Opinion on 11th March 2022 which confirmed that EIA is required for the Proposed Development and set out the range of matters to be addressed in the final production of the Environmental Statement.
- 1.5.3 Information pursuant to Regulation 18 of the EIA Regulations and as specified in Council's Scoping Opinion is provided in the enclosed Environmental Statement by AECOM Limited.

## 1.6 Planning Application Submission

- 1.6.1 The planning application submission consists of the following documents:
- Cover Letter.
  - Application forms and certificates (Including CIL Form and Article 13 Letters).
  - Ownership Certificate and Agricultural Land Declaration.
  - Planning Statement (this Document).
  - Design and Access Statement.
  - Consultation Report.
  - Environmental Statement Non Technical Summary.
  - Environmental Statement and technical appendices and figures.
  - Arboricultural Survey Report and Tree Constraints Plan.
  - Biodiversity Net Gain Report and Metric.
  - Report to Inform Habitats Regulations Assessment.
  - Parameter plans and drawings (for approval):
    - Site Location Plan, 1:2000 at A1
    - Existing Site Plan, Sheets 1-6, 1:500 at A1
    - Parameter / Zoning Plan Key Plan, Ref. 415000-00201-8820-01-0001, 1:2000 at A1
    - Parameter / Zoning Plan Plan Sheet 1, Ref. 415000-00201-8820-01-0002, 1:1000 at A1
    - Parameter / Zoning Plan Plan Sheet 2, Ref. 415000-00201-8820-01-0003, 1:1000 at A1
    - Parameter / Zoning Plan Sections Sheet 1, Ref. 415000-00201-8820-01-0014, 1:500 at A1
    - Parameter / Zoning Plan Sections Sheet 2, Ref. 415000-00201-8820-01-0015, 1:500 at A1



- Parameter / Zoning Plan Sections Sheet 3, Ref. 415000-00201-8820-01-0016, 1:500 at A1
- Parameter / Zoning Plan Sections Sheet 4, Ref. 415000-00201-8820-01-0017, 1:500
- Parameter / Zoning Plan Sections Sheet 5, Ref. 415000-00201-8820-01-0018, 1:500
- Plans and drawings:
  - Substation 04 Equipment Layout and Gallery Plan, Ref. 415000-00201-8330-47-0003, 1:100 at A1
  - Substation 04 Roof Plan and Section, Ref. 415000-00201-8330-47-0004, 1:100 at A1
  - CO<sub>2</sub> Compressor House Ground Floor Plan, Ref. 415000-00201-8330-47-0005, 1:100 at A1
  - MV Compressor House Plan and Section, Ref. 415000-00201-8330-47-0006, 1:100 at A1
  - CO<sub>2</sub> Compressor House Roof Floor Plan, Ref. 415000-00201-8330-47-0007, 1:100 at A1
  - Substation 05 Equipment Layout and Gallery Plan, Ref. 415000-00201-8330-47-0012, 1:100 at A1
  - Substation 05 Roof Plan and Section, Ref. 415000-00201-8330-47-0013, 1:100 at A1
  - General Arrangement, 60668866-ACM-XX-XX-DR-CE-0001-PO3, 1:250 at A1
  - Visibility Splays, 60668866-ACM-XX-XX-DR-CE-0002-PO3, 1:500 at A1
  - Vehicle Tracking, 60668866-ACM-XX-XX-DR-CE-0003-PO3, 1:500 at A1
  - Surfacing Plan, 60668866-ACM-XX-XX-DR-CE-0004-PO3, 1:250 at A1
  - Underground Utilities, 60668866-ACM-XX-XX-DR-CE-0005-PO2, 1:250 at A1
  - General Arrangement Key Plan, Ref. 415000-00201-8820-01-0004, 1:2000 at A1
  - General Arrangement Sheet 1, Ref. 415000-00201-8820-01-0005, 1:500 at A1
  - General Arrangement Sheet 2, Ref. 415000-00201-8820-01-0006, 1:500 at A1
  - General Arrangement Sheet 3, Ref. 415000-00201-8820-01-0007, 1:500 at A1
  - General Arrangement Sheet 4, Ref. 415000-00201-8820-01-0008, 1:500 at A1
  - General Arrangement Sheet 5, Ref. 415000-00201-8820-01-0009, 1:500 at A1
  - General Arrangement Sheet 6, Ref. 415000-00201-8820-01-0010, 1:500 at A1
  - General Arrangement Elevations Sheet 1, Ref. 415000-00201-8820-01-0011, 1:1000 at A1
  - General Arrangement Elevations Sheet 2, Ref. 415000-00201-8820-01-0012, 1:1000 at A1
  - General Arrangement Isometric View, Ref. 415000-00201-8820-01-0013

## 1.7 The Purpose and Structure of the Planning Statement

- 1.7.1 The Planning Statement assesses the planning considerations associated with the Proposed Development in relation to the context of the relevant national and local planning policy, as well as any supplementary planning guidance and other material considerations.
- 1.7.2 The Planning Statement draws upon and cross-refers, where relevant, to the other documents that form part of the planning application submission.
- 1.7.3 The Planning Statement has been prepared in accordance with Council's Validation List which confirms that a Planning Statement should identify material planning consideration and justifications, including all national and local planning policies.
- 1.7.4 Pre application engagement with NLC planning department has resulted in officer level pre application advice in relation to drawings and the list of documentation set out above.

### Structure

- 1.7.5 The remainder of the Planning Statement is structured as follows:

- Section 2: describes the site and its key features, the planning history of relevance that relates to it, any local planning designations and allocations that apply;
- Section 3: provides an overview of the Proposed Development, including use, amount, layout, appearance and access;
- Section 4: outlines the need for the development in this location, and carbon capture technology in general.
- Section 5: sets out the relevant policy and material planning considerations for the determination of the planning application.
- Section 6: provides an assessment of the Proposed Development against relevant policy.
- Section 7: sets out the conclusions of this Planning Statement in terms of the overall acceptability of the Proposed Development against the relevant criteria in planning legislation.

# 2.0 THE SITE AND SURROUNDING AREAS

## 2.1 Introduction

2.1.1 This section describes the location and key features of the Site and surrounding area, identifies any relevant planning and environmental designations, and explains the Applicant's site selection process.

## 2.2 Site Location, Description and Use

2.2.1 The Immingham industrial cluster is located on the south bank of the River Humber, approximately 1 kilometre from the coastline with the North Sea.

2.2.2 The VPI Site is 28.51 hectares ('ha') and within and immediately to the south of the operational VPI Immingham CHP Plant, accessed from Rosper Road. The area for the proposed VPI PCC plant and CO<sub>2</sub> compression is to the south of the existing Power Station and comprises grassland with an open ditch running west-east through the centre, areas of hardstanding and existing below ground utilities. The northern part of the VPI PCC plant area was previously used for laydown during the construction of the existing VPI Immingham CHP Power Station. The southernmost part of the VPI Site will not be developed but it will be used for construction laydown for the Proposed Development.

2.2.3 The existing CHP Plant is included in the VPI Site to allow for pipeline and cable connections between the CHP Plant and the Proposed Development. Available areas of the CHP Plant will also be used for construction laydown, and some of the existing CHP Plant facilities may be shared with the Proposed VPI Development. Indicative locations for the PCC Plant within the VPI Combined Heat and Power (CHP) Plant for two of the Gas Turbines (GTs) and the two auxiliary boilers are shown in Figure 2.1 below.

2.2.4 VPI Immingham's CHP Plant was constructed in two phases, and supplies:

- Heat (in the form of steam) to the two adjacent oil refineries (including Phillips 66 Limited's Humber Refinery); and
- Electrical power to the adjacent oil refinery and the National Grid Electricity Transmission System.

2.2.5 The first phase, commissioned in 2004, comprised the installation of two gas turbines (GT1 and GT2), each with associated heat recovery steam generators (HRSG1 and HRSG2) and steam turbines (ST1 and ST2). The first phase also comprised the installation of two auxiliary boilers (AB1 and AB2) to provide back-up heat (steam) supplies.

2.2.6 The second phase, commissioned in 2009, comprised the installation of an additional gas turbine (GT3), with an associated heat recovery steam generator (HRSG3) and steam turbine (ST3).

2.2.7 Natural gas is the primary fuel of the CHP Plant.

**Figure 2.1: Site location**



- 2.2.8 The Lindsey Oil Refinery is immediately north west and Humber Refinery is immediately south west and is bisected from the Site by a railway line. Immingham Dock is approximately 1.5km to the south east of the CHP Plant at its closest point. The Humber port is located approximately 980m north at its closest point. The nearest settlement is the town of Immingham which is located approximately 2.5km south of the Site and the nearest residential property is a single property on Marsh Lane located approximately 700m to the east.
- 2.2.9 The land to the north is the Site of the proposed VPI Immingham Open Cycle Gas Turbine ('OCGT') Power Station (also known as VPI Energy Park 'B'), which was granted development consent on 7 August 2020. In 2018 planning permission was granted on land to the north of and within the VPI Immingham CHP Plant (Council application reference. PA/2018/918) for the construction of a gas fired power station with a gross electrical output of up to 49.9 megawatts (known as VPI Immingham Energy Park 'A').
- 2.2.10 The Proposed Development is located within the administrative area of North Lincolnshire Council, which is a unitary authority, and the administrative boundary of North East Lincolnshire Council lies 1km to the south.
- 2.2.11 The surrounding area comprises industrial and agricultural uses. Further eastwards beyond the railway line are agricultural fields which are approximately 1km away located towards the Humber Estuary. A large portion of these agricultural fields (approx. 100.3 ha) has been identified for future development of the Able Marine Energy Park (AMEP) which was granted under Development Consent Order in December 2013. The scale of the project is substantial in comparison to the Proposed Development with the AMEP site covering an area of 268 ha on the southern bank of the Humber Estuary and structure/building heights up to 45m. The AMEP will be developed for a new quay and industrial uses, and will primarily serve the emerging renewable marine energy

sector. This demonstrates the context of intensified industrial activity in the vicinity, specifically that with a focus towards decarbonisation of energy production.

2.2.12 There is further large scale planned industrial and energy related development within 5km of the Site, particularly along the South Humber coast reinforcing the industrial character of the site and surrounding area. Further details are provided in the Environmental Statement chapter 18 Cumulative and Combined Effects.

2.2.13 Industrial activities associated with the storage and export of gas and oil and other port activities occur at various locations along the banks of the Estuary itself, approximately 1.5km from the Site at its closest point.

## 2.3 Planning and Environmental Designations

2.3.1 A review of the Council's interactive Planning Policy Map has identified the following designations on or in proximity to the Site shown in Figure 2.3. The Policy map for the Draft Local Plan is shown in Figure 2.4.

### North Lincolnshire Core Strategy 2011

- Ports and wharves (CS1; CS11; CS12; CS26).
- Strategic Employment Locations (CS1; CS4; CS11; CS12; CS17; CS25; CS26).
- Area of Search for Waste Facility (CS20).
- Major Road Improvement (CS1; CS4; CS11; CS12; CS26).

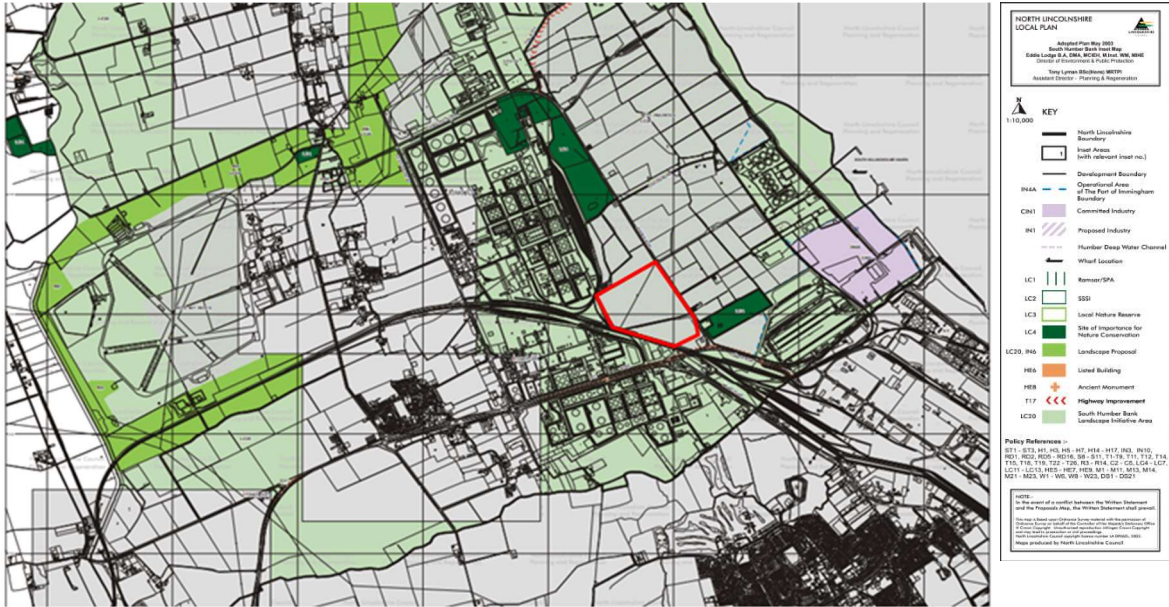
### Housing and Employment Land Allocations DPD 2016

- Proposed Development IN12-6.
- Site of Importance for Nature Conservation (LC4) adjacent to the east and the north.
- South Humber Bank Landscape Initiative (LC20) to the west.
- Listed Building HE-5 to the east.
- T17 highway improvement to the south.

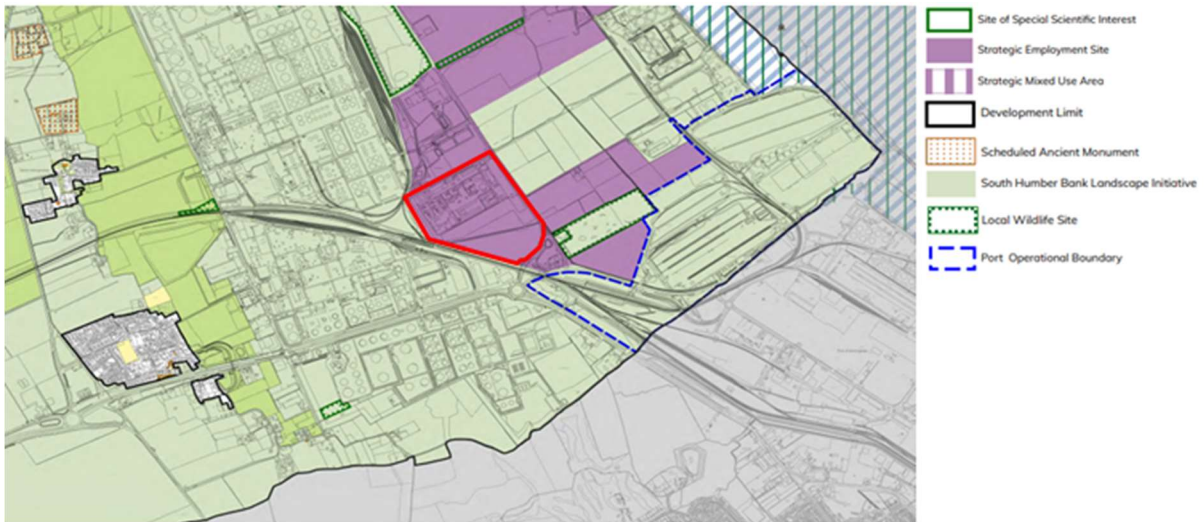
### North Lincolnshire Local Plan Stage 5 Publication Addendum

- Strategic Site Allocation: South Humber Bank (SS10).
- South Humber Bank Landscape Initiative (EC4).
- Landscape enhancement (DQE2).

**Figure 2.3: North Lincolnshire Local Development Framework Proposals Map**

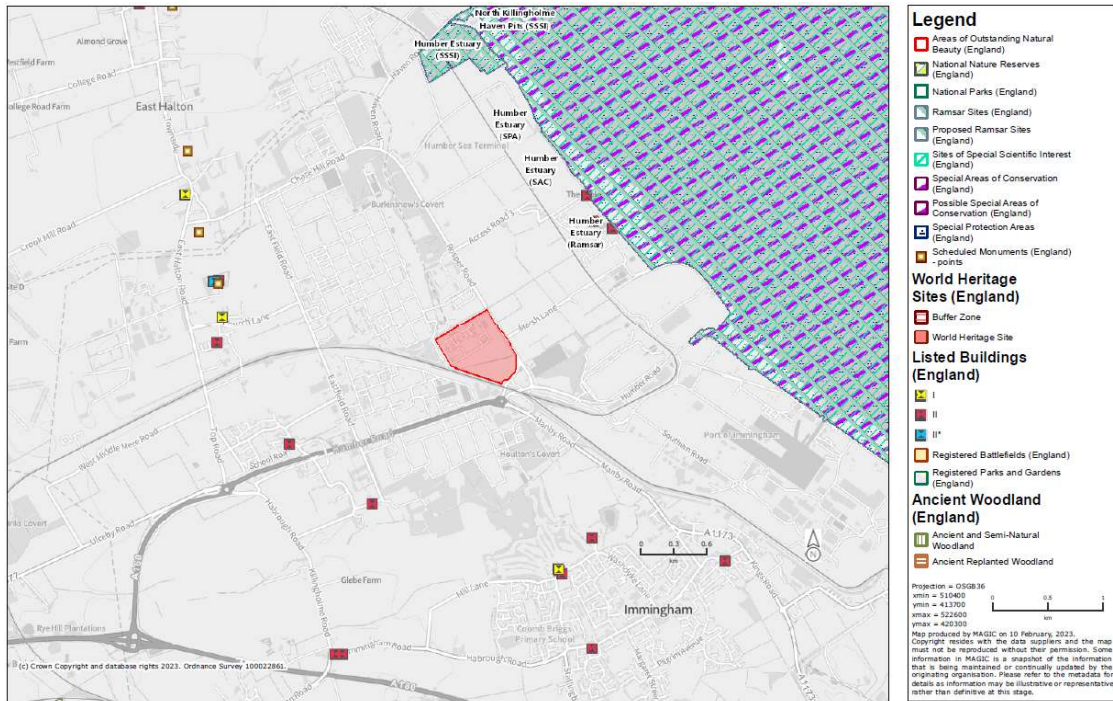


**Figure 2.4: North Lincolnshire Draft Local Plan Proposals Map**



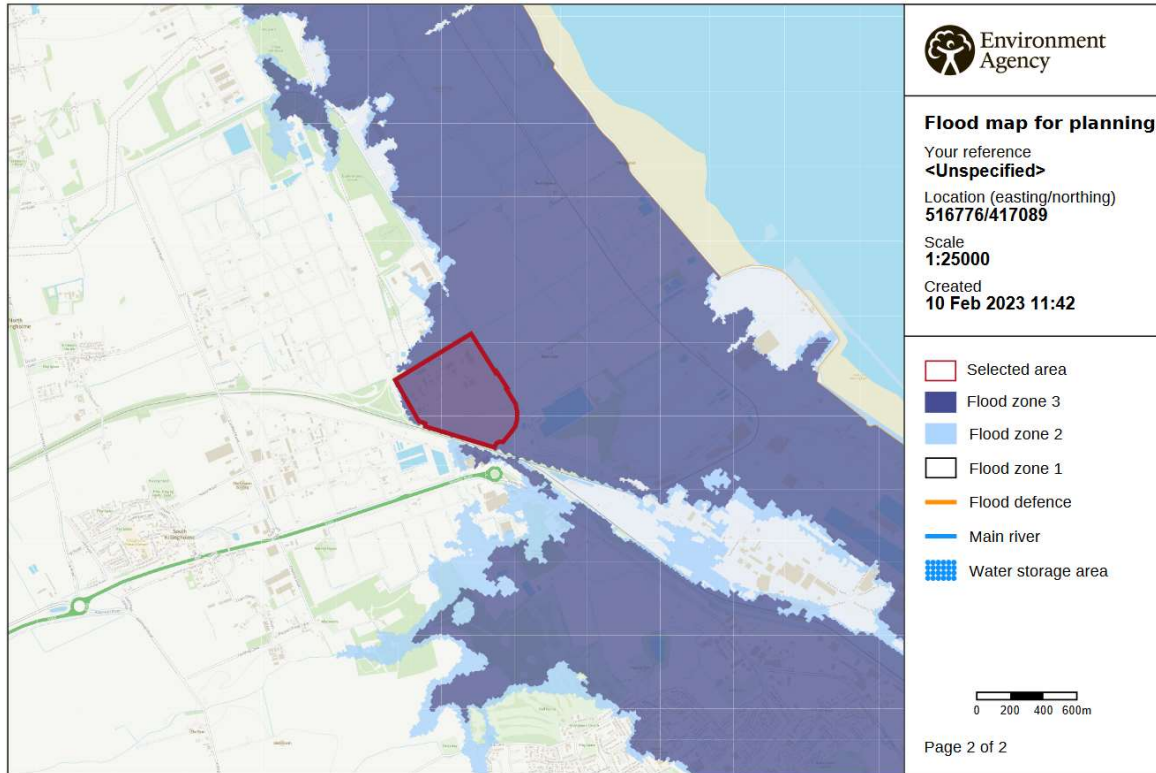
2.3.2 A search of the Government’s MAGIC Map database revealed that the site does not contain any environmental or heritage designations. An extract of the MAGIC Map search is provided as Figure 2.5.

**Figure 2.5: MAGIC Map extract – environmental and heritage designations**



- 2.3.3 The closest environmental designation is the Humber Estuary which is designated as a Site of Special Scientific Interest ('SSSI'), a Special Protection Area ('SPA'), a Special Area of Conservation ('SAC') and Ramsar site, lying 1.6km to the north-east.
- 2.3.4 No heritage designations have been identified within the Site. The nearest listed buildings are three Grade 2 light houses 1.8km to the east and the Nook a Grade 2 listed building in South Killingholme, 1.6km to the west. Manor Farm Moated Site (NHLE 1008044) Scheduled Monument is approximately 2.1 km to the north-west.
- 2.3.5 A search of Environment Agency mapping shows the Site is located within Flood Zone 3 as illustrated in Figure 2.6. The red line showing in this figure is a sketch of the true application boundary.

**Figure 2.6: Flood Mapping**



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## 2.4 Planning History

2.4.1 A search of the Council’s online planning register identified the following planning applications and records within the Site.

**Table 2.1: Site Planning History**

| Application Reference | Proposal description  | Decision                   |
|-----------------------|---|----------------------------|
| PA/1998/1544          | Form B application to construct a combined heat and power generating power station  | No objection<br>15/02/1999 |
| PA/1999/1229          | Form B application to erect a combined heat and power plant   | 13/11/2000                 |
| PA/2000/1467          | Form B application to erect an extension to existing heat and power plant   | 22/03/2001                 |
| PA/2005/1884          | Form B application to extend the existing combined heat and power plant to a total generation capacity of 1230 MW (proposed extension 470 MW)   | 22/03/2006                 |
| PA/2008/1704          | Hazardous Substances Consent to store 3050 tonnes of petroleum gas oil as described under entry number Part 2 10 (ii) of Schedule 1 of the Planning (Hazardous Substances) Regulations 1992 | 02/02/2009                 |
| PA/2009/1093          | Planning permission to replace two gas turbine air inlet filter houses  | Approved<br>16/10/2009     |
| PA/2011/0370          | Planning permission to erect office extension.  | Approved<br>26/05/2011     |



|               |  |                        |
|---------------|--|------------------------|
| PA/SCO/2017/3 | Scoping opinion for VPI-Immingham Energy Park 'A' Power Station  | 31/1/18                |
| PA/2021/1039  | Application for a non-material amendment following a grant of planning permission PA/2018/918 to amend conditions 3, 5, 6, 8, 9, 13 and 16 | Approved<br>08/07/2021 |
| PA/SCO/2022/5 | EIA scoping opinion for V Net Zero pipeline  | 27/04/2022             |
| PA/2022/1548  | Planning permission to construct and operate a temporary pilot post-combustion carbon capture plant and associated infrastructure          | Approved<br>26/10/2022 |

## 3.0 THE PROPOSED DEVELOPMENT

### 3.1 Introduction

3.1.1 This section provides a description of the Proposed Development, including its main components, construction and operation.

### 3.2 Development Summary

3.2.1 The Proposed Development comprises a PCC Plant within the VPI Combined Heat and Power (CHP) Plant for two of the Gas Turbines (GTs) and the two auxiliary boilers. The Proposed Development is associated with the Phillips 66 Limited Post-combustion Carbon Capture (PCC) Plant for the Humber Refinery as part of the 'Humber Zero' project. The latter is the subject of a separate planning application.

3.2.2 The Proposed Development will be designed to operate 24 hours a day, 7 days a week as per the existing VPI Immingham CHP Plant. The Proposed Development will operate under Environmental Permits from the Environment Agency which will stipulate the required environmental monitoring and controls to be employed, including emissions monitoring systems.

3.2.3 The Proposed Development will require water, power and steam when under operation. It is anticipated that these utilities will be sourced from within the Site. The Proposed Development will also require chemicals such as caustic and solvents which treat the flue gases to remove the carbon dioxide.

3.2.4 The Proposed Development will generate solid and liquid wastes, which will be treated on Site as required and/or discharged or disposed off-site by a licensed waste carrier. Surface water runoff will be managed in accordance with an approved drainage strategy, and it is anticipated that this will discharge via the ditch along the eastern boundary on the VPI Site. Scheduled maintenance will take place at regular intervals during the operational life of the Proposed Development. The Proposed Development will have a design life of at least 25 years, yet the operational life could potentially be longer subject to market conditions which will be appraised as the project operates.

#### **Main Components**

3.2.5 The Proposed Development will predominately comprise of a PCC Plant and associated facilities for capturing CO<sub>2</sub> from two of the gas turbines (GT1 and GT2) and two auxiliary boilers at the VPI Immingham CHP Plant.

3.2.6 The Proposed Development will include the following components:

- ducting to connect GT1, GT2 and the auxiliary boilers to the PCC plant;
- two PCC units (or 'trains'), each with associated, blower, direct contact cooler, absorber, stack, stripper/ regenerator, heat exchangers and a common thermal reclaimer unit;
- a CO<sub>2</sub> vent stack for use during start up, shut down and emergencies only;
- CO<sub>2</sub> compression facility with associated heat exchangers;
- oxygen removal and dehydration facilities;

- CO<sub>2</sub> metering and a pipeline connecting the PCC plant and compression facilities to the CO<sub>2</sub> gathering network interface;
- on-site electrical substations;
- caustic, solvent and other chemical offloading and storage facilities;
- utilities (including chillers, steam generator, hydrogen package and air compressors)
- internal access roads;
- surface water drainage system;
- realignment of the existing ditch (South Killingholme Drain) within the VPI Site;
- construction and maintenance laydown areas; and
- a new site access from Rosper Road.

3.2.7 Each of the key components is described in further detail below.

3.2.8 The maximum dimensions of the key components are set out in Table 3.1 (Design Parameters). To ensure a robust assessment of the likely significance of the environmental effects of the Proposed Development, the EIA has been undertaken adopting the principles of the 'Rochdale Envelope' approach where appropriate. This involved assessing the maximum (or where relevant minimum) parameters for the elements where flexibility needs to be retained (such as building dimensions). As such the ES presents a reasonable worst case assessment of the Proposed Development.

3.2.9 In the VPI Development the flue gas will be diverted from the CHP Plant directly to one of two PCC trains located to the south of the CHP Plant, where the flue gas will first be cooled using a direct contact cooler to enable the PCC process to absorb CO<sub>2</sub> more effectively.

### 3.3 Carbon Capture and Associated Stacks

3.3.1 The flue gas will be diverted from the CHP Plant directly to one of two PCC trains located to the south of the CHP Plant, where the flue gas will first be cooled using a direct contact cooler to enable the PCC process to absorb CO<sub>2</sub> more effectively.

3.3.2 The CO<sub>2</sub> 'rich' flue gas will pass through a blower before entering the Direct Contact Cooler, followed by the CO<sub>2</sub> absorber tower where it will come into contact with the amine solvent, which will absorb 95% of the CO<sub>2</sub>. The CO<sub>2</sub> 'lean' flue gas (flue gas with 95% CO<sub>2</sub> removed) will be released from the absorber tower, and the CO<sub>2</sub> rich amine will be heated to separate the CO<sub>2</sub> from the amine in the regenerator towers (also known as CO<sub>2</sub> stripper towers). The Proposed Development will include two absorber towers and two regenerator towers (one of each for each PCC train).

3.3.3 The Applicant has selected Shell as the technology provider and CANSOLV DC 103 as the amine solvent. The majority of the amine will be in a continuous recycle loop and treated for re-use in the PCC plants. A very small quantity of amine will be emitted from the process (released with the CO<sub>2</sub> lean flue gas from the absorber towers) and the amine will also degrade over time so 'fresh' amine will be required to make up amine losses throughout the operation of the PCC plants.

## 3.4 Carbon Dioxide Venting, Treatment and Compression

- 3.4.1 The gaseous CO<sub>2</sub> will be saturated with water and will contain traces of oxygen which will need to be removed to achieve the specification required by the CO<sub>2</sub> gathering network operator.
- 3.4.2 During start up and shut down of the PCC plant (for example before and after a maintenance outage) when the required CO<sub>2</sub> specification cannot be achieved, CO<sub>2</sub> will need to be safely vented to the atmosphere. CO<sub>2</sub> venting may also be required during emergency situations to ensure safe operation of the PCC plants. CO<sub>2</sub> vent stacks are therefore included as part of both the Proposed Development, with the height of the emission point (40 m) designed to ensure safe dispersion of the CO<sub>2</sub>.
- 3.4.3 The captured CO<sub>2</sub> will need to be compressed ready for injection into the CO<sub>2</sub> gathering network. Compression will be undertaken in two phases – first low pressure (LP) compression, then high pressure (HP) compression to 135 barg (the pressure required for injection into the CO<sub>2</sub> gathering network). Dehydration and oxygen removal steps are performed between the LP and HP phases.

## 3.5 Transport to CO<sub>2</sub> Gathering Network

- 3.5.1 The Proposed Development will connect to Viking CCS network and/or Humber Low Carbon Pipelines Project to transport CO<sub>2</sub> to a storage site under the North Sea. As noted earlier, both of these CO<sub>2</sub> gathering networks are the subject of DCO applications due to be submitted mid 2023 by Harbour Energy and National Grid Carbon, respectively.
- 3.5.2 At this stage it is important for the Proposed Development to retain flexibility regarding the final CO<sub>2</sub> gathering network, so the Proposed Development layouts allow for connection at a CO<sub>2</sub> gathering network tie-in compound in the available land to the south of the Proposed Development.
- 3.5.3 Metering and analysing will also be provided to measure the quantity and quality of CO<sub>2</sub> leaving each of the Proposed Development.

## 3.6 Other Components

- 3.6.1 In addition to the main components described above (CO<sub>2</sub> capture, compression and connection to the CO<sub>2</sub> gathering network), the VPI Development will also require:
- electrical substations to supply the required electrical power to the PCC plant;
  - chemical offloading storage and distribution facilities for caustic, solvent and other limited amount of chemicals required for the PCC plant such as antifoam;
  - internal access roads providing access around the VPI Development and connecting the VPI Development to existing roads in and around the CHP Plant;
  - surface water drainage system with an attenuation lagoon to manage uncontaminated surface water runoff and attenuate runoff on-site prior to discharge at the greenfield runoff rate;
  - realignment of South Killingholme Drain through the VPI Site to facilitate the VPI Development and creation of up to four temporary crossings of the realigned Drain to be used during

construction and then removed prior to operation – this has been discussed with the North East Lindsey Internal Drainage Board (NEL IDB) who manage the Drain for local flood risk management;

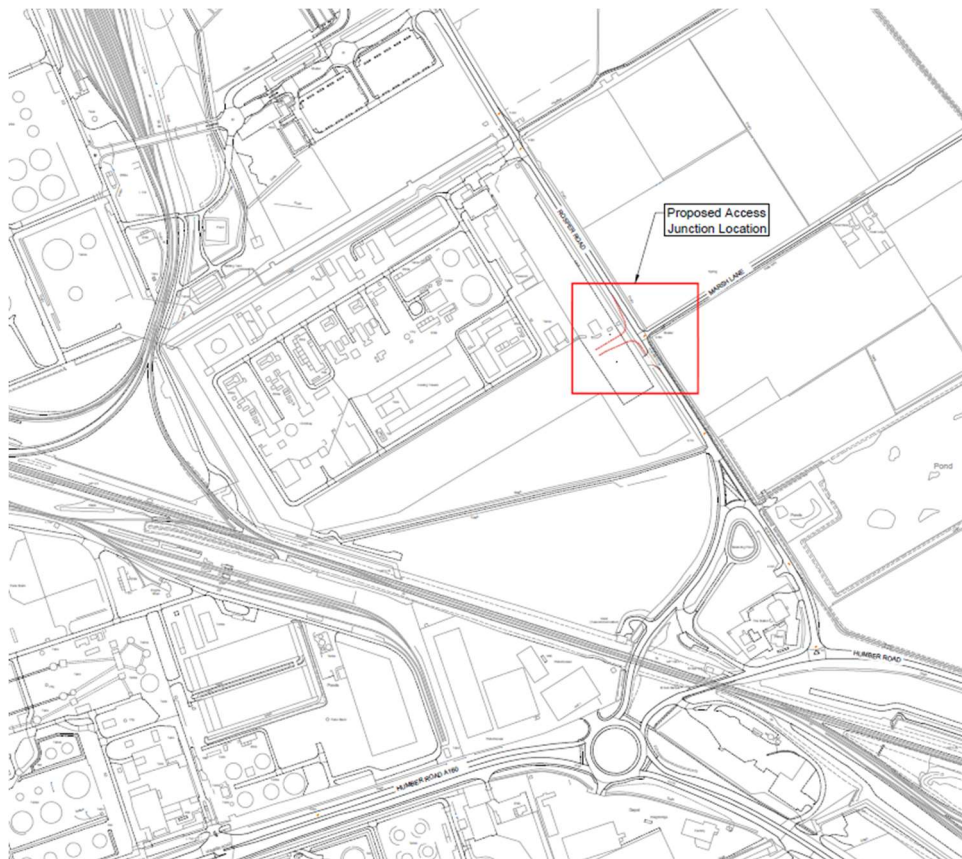
- construction and maintenance laydown areas, which are expected to be located on existing hardstanding within the existing CHP Plant and in the southernmost part of the VPI Site; and
- new site access from Rosper Road.

### 3.7 Access

3.7.1 The Proposed Development will utilise the existing access to the Site along with a proposed new access to Rosper Road.

3.7.2 A new access (also shown on Figure 3.1) is also proposed to be constructed from the public highway (Rosper Road) into the Site. This new access will be used as the main HGV access and egress during construction and for maintenance and emergency use during operation. Staff access will be via the existing main entrance to the CHP Plant.

**Figure 3.1: Proposed new site access location**



### 3.8 Landscaping and Biodiversity

3.8.1 Existing boundary vegetation and the trees either side of the Network Rail railway line will be retained and protected. This is with the exception of two small areas of low value trees (G9 and G13 in Appendix 2A) which encroach into the construction laydown area and may therefore need to be removed.

- 3.8.2 An Arboricultural Survey Report and Tree Constraints Plan have been undertaken to identify the nature and level constraints proposed by existing trees on the Site and inform the design of the Proposed Development to ensure potential impacts on significant trees are fully considered.
- 3.8.3 It concludes that trees flanking the railway line in the southwest of the Site form a spatial constraint to any potential development works. A key consideration for any development activity will be the protection of the surrounding trees. The default position is that all Root Protection Areas (RPA) and canopies of retained trees would be fenced off as exclusion zones with no access. Where this is not feasible limited access may be acceptable using fit for purpose ground protection or other protective measures in accordance with BS5837. Outside of the canopy and RPA, development works are not likely to be significantly constrained by trees, however it is important not to significantly impact on ground water levels in proximity to trees and where this could be a potential impact specific arboricultural advice must be obtained. It is anticipated that as the detailed design progresses, an Arboriculturalist would be engaged to inform this process.
- 3.8.4 There is limited space within the Site for landscaping and biodiversity habitat creation, but opportunities to provide landscape planting within the Site will be considered at the detailed design stage.
- 3.8.5 A Biodiversity Net Gain (BNG) assessment has been undertaken and a BNG Strategy accompanies this planning application. This identifies options for off-site biodiversity enhancements to achieve 10% Biodiversity Net Gain for the Proposed Development, the details of which will be secured by planning condition(s).

## 3.9 Security

- 3.9.1 Whilst the VPI Immingham CHP Plant also has existing security fencing and monitoring equipment, additional security measures are proposed for Proposed Development to the south of the existing CHP Plant in accordance with current industry best practice. This will comprise additional CCTV cameras and 2.4 m high perimeter fencing.

## 3.10 External Lighting

- 3.10.1 Lighting will be provided to achieve illumination necessary for safe operation and maintenance of the Proposed Development.
- 3.10.2 External lighting will be of LED type positioned to minimise light spill from the boundaries of the Site. Where appropriate, outdoor lighting will be switched on and off centrally by means of photocells or timers.
- 3.10.3 The Proposed Development's absorber stacks will be fitted with aviation warning lighting as required by the Civil Aviation Authority.

## 3.11 Design Parameters

- 3.11.1 The technical assessments that accompany this planning application are based on the site layout parameters plans presented in Figure 3.2.
- 3.11.2 The exact positions of each component including the stacks cannot be fixed as the detailed design has not been completed. Each technical assessment presented has therefore adopted a relevant worst case using the parameters plans to represent the worst-case impact at receptors.

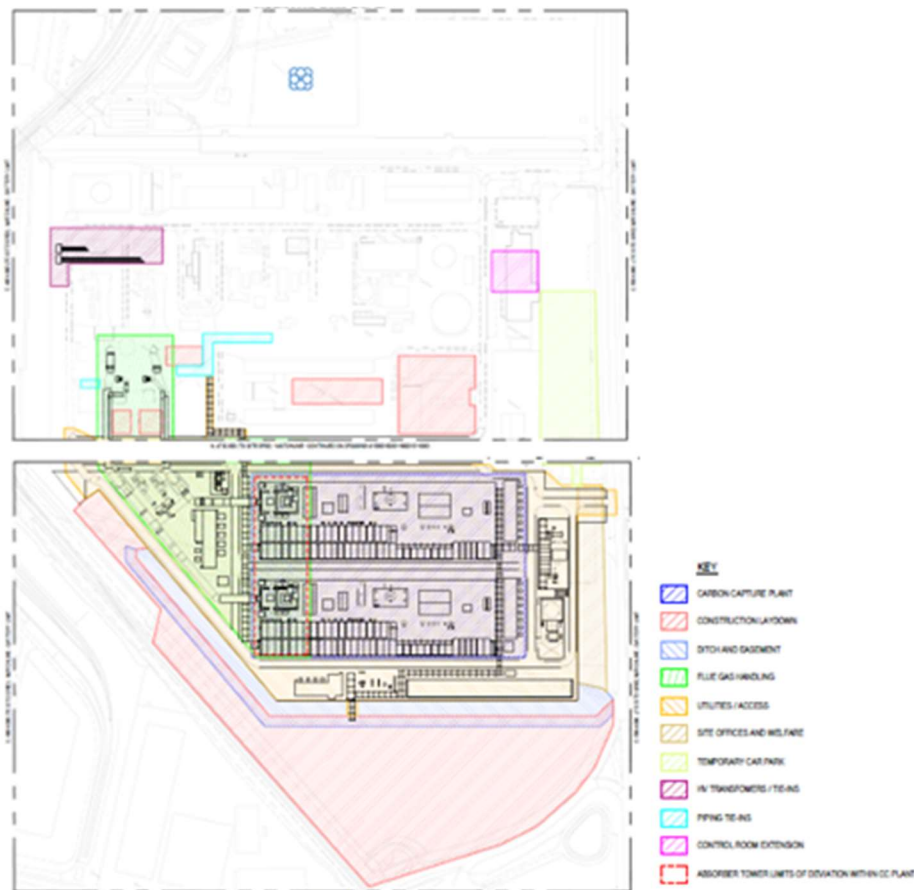
3.11.3 Tables 3.1 sets out the maximum and minimum dimensions of the main components of the Proposed Development which has been used as the basis for the various technical assessments presented in this ES to ensure a robust assessment based on reasonable and appropriate worst-case assumptions. This approach is referred to as ‘the Rochdale envelope’ approach.

3.11.4 For clarity, the drawings enclosed with the Application represent one way in which the development could appear or be laid out, within those maximum design parameters. The design of the Proposed Development is not yet finalised and therefore the detailed design could vary in appropriate (and in EIA terms insignificant) respects from the drawings. We anticipate detailed designs would be reserved by condition.

**Table 3.1: Maximum design parameters for the Proposed Development**

| Development Component                        | Maximum Design Parameter                          |
|--|---|
| Absorber column and associated stack         | Up to 110m height above ground level (114.9m AOD) |
| CO <sub>2</sub> regenerator/ stripper column | Up to 60m height above ground level (64.9m AOD)   |

**Figure 3.2: Parameter plan layout of the Proposed Development**



## 3.12 Construction Programme and Approach

3.12.1 As discussed in ES Chapter 3 (Proposed Developments, Description, Need and Alternatives Considered) and Chapter 4 (Construction Programme and Management) construction of the Proposed Development could (subject to the necessary consents being granted and government

policy/ funding support being in place to enable an investment decision being made) potentially start in Quarter 3 of 2024 for the VPI Development.

- 3.12.2 It is common for much of the groundwork, for example piling and pouring of concrete slabs, to be completed prior to the erection of any above ground permanent structures. The completion of buildings and structural components, such as cladding and external civil works, usually continues whilst mechanical erection is ongoing. However, the detailed phasing of construction is the responsibility of the appointed EPC contractor(s) and may vary dependent on plant layout and procurement of key equipment.
- 3.12.3 During the detailed design stage, the approach to construction will be defined. For the purposes of this ES, it is assumed that certain parts of the capture plant will be modularised and assembled. Modularised units, along with large specialist equipment are likely to require special transport and lifting considerations. Off-site pre-fabrication will be supplemented by on-site construction of certain larger components which due to their size or weight, may involve fabrication and erection on-site. Small components and modules will be transported using the existing road network with more significant modules potentially being transported to the Port of Immingham.

## 3.13 Construction Methods

### Site Enabling and Preparation Including Earthworks

- 3.13.1 Early works at the VPI Site are anticipated to commence in Quarter 3 of 2024 and are anticipated to be completed by Quarter 1 2025. Early works include the establishment of a haul road entrance, followed by clearing the site, ditch relocation, and remediation works as well as the construction of temporary facilities.
- 3.13.2 Earthworks will include the clearing of unsuitable soil and reprofiling with clean infill (where required). As far as reasonably practicable, a material cut and fill balance will be sought to minimise waste arisings, but for the VPI Site it is anticipated that some import/ export of materials will also be necessary to provide a suitable foundation platform for the Proposed VPI Development (and this is accounted for in the assessment of construction traffic in Chapter 8: Traffic and Transport). It is anticipated that up to 100,000 m<sup>3</sup> may need to be disposed off site and up to 165,000m<sup>3</sup> of soils and various grades of stones/gravels may need to be imported over a c. five month period to provide a suitable platform for foundations and buildings/ equipment across the VPI Site.
- 3.13.3 Any excess spoil generated during construction of the Proposed Development will be managed through a Site Waste Management Plan (SWMP) that would form part of the Contractors CEMP. Demolition waste will also be managed through the SWMP. Demolition and construction waste is assessed in ES Chapter 15: Waste and Resource Management.
- 3.13.4 Spoil which cannot be re-used will be removed from site for re-use, treatment or disposal at a permitted facility. The re-use of excavated materials during construction will be governed by either a Materials Management Plan an environmental permit or a relevant exemption.
- 3.13.5 Where necessary, suitable measures will be put in place to prevent sediment being washed off-site, and the stockpiles will be visually monitored for wash away during and after periods of prolonged rainfall.



- 3.13.6 Existing services within the Sites may require relocation within the Sites and South Killingholme Drain will be re-located within the VPI Site.

### **Construction Laydown Areas and Welfare Facilities**

- 3.13.7 Proposed laydown areas required during construction, including equipment and material storage, site offices, batch concrete facilities, welfare facilities and car parking, environmental/ waste handling areas and vehicle wheel wash areas will be located within the Sites. Laydown areas will be required for the duration of construction.
- 3.13.8 The main laydown area for the Proposed VPI Development will be in the southern part of the VPI Site. Existing areas of hardstanding within the VPI Immingham CHP Plant will also be used for construction laydown.
- 3.13.9 Where storage space is limited, materials will be delivered in a phased manner to suit construction requirements month to month.
- 3.13.10 Where required, laydown areas will be levelled to provide an even surface and underlain by semi-permeable surfacing, to allow surface water and rainwater to percolate through. No hazardous materials would be stored unbunded within the construction laydown areas. All construction laydown areas would be secured by security fencing and gates as appropriate.

### **Main Civil and Process Works**

- 3.13.11 Following site preparation, the Contractor will undertake piling and excavation for main foundations for some of the larger elements of the Proposed Development. Below groundworks may require dewatering by well pointing for larger foundations. If water is encountered during below ground construction, suitable de-watering methods will be used. Any significant groundwater dewatering required will be undertaken in line with the requirements of the Environment Agency under the Water Resources Act 1991 as amended and Environmental Permitting (England and Wales) Regulations 2016.
- 3.13.12 Piling and penetrative foundation design method statements, informed by a risk assessments, will be undertaken for each Proposed Development in accordance with Environment Agency guidance (2001). All piling and penetrative foundation works will be carried out in accordance with the approved method statements to prevent contamination of the underlying soils and groundwater.
- 3.13.13 Building erection and plant installation will be carried out as concurrent activities, noting that not all buildings will be erected prior to the commencement of plant installation. Large plant may be first placed on foundations with structures erected around it.
- 3.13.14 Plant and equipment will be pre-fabricated where practicable, however, it is anticipated that larger equipment may need to be fabricated and erected onsite due to its anticipated size.

### **Construction Staff**

- 3.13.15 It is estimated that there will be circa 840 personnel contracted to work on the Proposed Development at the peak of construction. This figure is based on experience of other comparable developments and informs the transport assessment presented in Chapter 8: Traffic and Transport and Appendix 8A: Transport Assessment (ES Volume II).

3.13.16 Information on proposed measures to manage the impacts of construction staff traffic is provided in the Framework Construction Workers' Travel Plan (CWTP) in Appendix 8C (ES Volume II).

### **Construction Working Hours**

3.13.17 Normal construction working hours for the Proposed VPI Development will be 07:00 and 19:00 Monday to Friday (except Bank Holidays) and 07:00 to 13:00 on Saturdays with no working on Sundays and Bank Holidays.

3.13.18 However, it is likely that some construction activities may need to be undertaken outside of these normal working hours, principally because certain construction activities cannot be stopped, such as concrete pouring, but also potentially to manage the construction programme. Where on-site works are to be conducted outside the normal construction working hours, they will comply with any restrictions agreed with the local planning authority, in particular regarding control of noise.

### **Construction Traffic and Site Access**

3.13.19 The Proposed Development will be accessed during construction via new Site access on Rosper Road, which together with the existing access to the CHP Plant will allow the anticipated vehicular HGV traffic and ensure safe access and/or egress into the Site. A network of internal access roads will accommodate HGV movements around the development Site.

3.13.20 Framework Construction Traffic Management and Construction Worker Travel Plans are provided in Appendices 8B and 8C (ES Volume II).

3.13.21 Combining construction workforce vehicle movements with construction HGV movements over the entire construction programme for both Proposed Developments, shows the overall peak HGV movements will be approximately 480 per day (240 in and 240 out). Further information on traffic volumes and routing is provided in Appendix 8A: Transport Assessment (ES Volume II).

### **Construction Lighting**

3.13.22 Construction temporary site lighting, including external lighting is proposed to enable safe working on the Site in the hours of darkness. The external lighting schemes will be designed to provide safe working conditions whilst reducing light pollution and the visual impact on the local environment. The temporary construction lighting will be arranged so that glare is minimised outside the Site.

### **Security**

3.13.23 Security will be managed to ensure that risks are maintained to as low as reasonably practicable. The approach to security will include:

- compliance with the existing security policies, procedures and arrangements for the VPI Immingham CHP Plant;
- controlled pedestrian and vehicular access to the Site;
- perimeter fencing around the Site; and
- closed circuit television surveillance and intruder alerts.

## **Wheel Wash Facilities**

- 3.13.24 In the interests of highway safety, wheel cleaning facilities will be installed at the Site from the start of the construction phase. The need for this measure will be periodically reviewed throughout the construction phase.

## **Construction Environmental Management Plan (CEMP) and Site Waste Management Plan (SWMP)**

- 3.13.25 A CEMP will be developed to control construction activities at the Site to minimise potential impacts on the environment and include best practice mitigation during the construction of the Proposed Development. An Outline CEMP is provided in Appendix 4A (ES Volume II).
- 3.13.26 A SWMP will be developed as part of the CEMP to control and manage all wastes arising from the construction activities to minimise, as far as reasonably practicable, impacts on the environment. The SWMP will specify the waste streams to be estimated and monitored and will set goals with regards to the waste produced.
- 3.13.27 Construction best practice measures that will be adopted during the construction phase are set out in each technical chapter of the ES (Chapters 6 to 17) and have been taken into account in the EIA.

## **Commissioning and Testing**

- 3.13.28 Commissioning of the Proposed Development will include testing and commissioning of the process equipment in order to ensure that that all systems and components installed are in accordance with the requirements. This is anticipated to take approximately six to twelve months for the Proposed Development. A commissioning plan will be required to be agreed with the Environment Agency under the Environmental Permit, which will specify monitoring and control procedures to be used and set out a schedule of commissioning and testing activities.
- 3.13.29 Commissioning and testing activities include both cold and hot testing as a structured process to include static, dynamic, energised, functional and performance testing. These activities will generally commence using inert materials such as air, water and nitrogen and lubricants before progressing to pressurised operation using process fluids such a natural gas and steam.

# **3.14 Operation**

## **Hours of Operation**

- 3.14.1 The Proposed Development will be designed to operate 24 hours a day, 7 days a week as per the existing VPI Immingham CHP Plant.

## **Staff**

- 3.14.2 The Proposed Development will be operated as part of the wider CHP Plant operations. The Proposed Development will create approximately 50 new full time equivalent (FTE) roles.

## **Process Inputs Including Chemicals, Electricity, Water and Steam**

- 3.14.3 The Proposed Development will use various raw materials during operation, which will be delivered by road.

3.14.4 Materials including chemicals to be stored and used within the Proposed Development will be subject to control via the Environmental Permits, Hazardous Substances Consents (where applicable), Control of Major Accident Hazards (COMAH) licences (where applicable) and other necessary consents required, and are anticipated to include the following:

- caustic;
- activated carbon;
- antifoam agent;
- amine (Shell CANSOLV solvent DC-103); and
- silica gel.

3.14.5 All liquid chemicals stored on site will be kept in bunded controlled areas within a volume of 110% of storage capacity and be appropriately segregated, in order to reduce the risk of contamination.

3.14.6 Odour will be controlled where relevant by appropriate storage.

3.14.7 The PCC processes will also have electricity, water and steam demands. Electricity and steam will be supplied from the CHP Plant (which already supplies these utilities to the adjacent Phillips 66 Refinery) and water will be supplied from the existing CHP Plant water supply network. Demineralised water used in the PCC process and firewater will be supplied by the existing CHP Plant. Sodium carbonate will be required during commissioning.

3.14.8 Hydrogen will be generated on-site as a result of the Proposed Development.

### **Process Outputs Including Emissions to Air and Waste Management**

3.14.9 The Proposed VPI Development will introduce three new emission sources to the air:

- two absorbers, which will emit the CO<sub>2</sub> lean CHP Plant flue gas; and
- a CO<sub>2</sub> vent stack for use during start up, shut down, and emergencies only.

3.14.10 The PCC processes will generate waste materials which will be collected, stored and managed in accordance with best practice. Waste materials will include:

- waste from site offices; and
- waste from the PCC plant.

3.14.11 Chapter 16 of the ES (Materials and Waste) provides the findings of an assessment of the likely significant effects on materials and waste as a result of the Proposed Development.

### **Process Cooling**

3.14.12 Following a Best Available Technique (BAT) assessment of cooling options, the Proposed Development have been designed to use air cooling. This is largely due to the limited water resources available in the area, and limited impact on the PCC plants' efficiency, which favour air cooling over water or hybrid cooling techniques.

## Site Drainage and Water Treatment

- 3.14.13 The VPI Site area within the existing CHP Plant will be drained as at present with all uncontaminated surface water being collected, attenuated and discharged to South Killingholme Drain via a separation pond, and all foul drainage being collected and treated at the CHP Plant wastewater treatment plant before being discharged to the off-site ditch via a separation pond.
- 3.14.14 A new drainage system will be installed as part of the Proposed Development to the south of the CHP Plant. Some liquid effluents (e.g. degraded solvent waste) will be collected and tankered off site for disposal. Uncontaminated surface water will be collected and attenuated on site before being discharged to South Killingholme Drain. Surface water from areas where there is potential for:
- hydrocarbon contamination (e.g. from pumps and compressors) will pass through an oil interceptor before entering the attenuation pond;
  - amine contamination will be collected and tested before discharge to the attenuation pond or tankered off site; and
  - contamination from spillages during loading and unloading operations will be directed to a holding tank and tankered off site.
- 3.14.15 The existing foul water system will be utilised for the Proposed Development as no permanently occupied buildings are proposed, however, an expansion may be required to cater for additional staff members. The existing system involves a conventional foul sewer to sumps and pumped off-site to the local area foul sewer connection or emptied via vacuum tanker and disposed of offsite. Some liquid effluents (e.g. contaminated surface water runoff) will be collected and tankered off site.

## Maintenance

- 3.14.16 The objective of plant maintenance is to ensure the Proposed Development operates safely and reliably, and inspection and maintenance activities have informed the Proposed Development's layout.
- 3.14.17 Routine maintenance will be planned and scheduled as for the existing VPI Immingham CHP Plant, approximately every three to five years. Maintenance activities require additional contractors to work on site.
- 3.14.18 The Proposed Development will have an initial design life of at least 25 years, although the operational life could potentially be longer subject to market conditions.

## Hazard Prevention and Emergency Planning

- 3.14.19 The Applicant's aim is to protect human health by safely and responsibly managing activities on site. A Health and Safety Plan covering the works, commissioning and operation of the Proposed Development will be prepared by the Applicant. For design and construction, a competent and adequately resourced Construction (Design and Management) (CDM) Coordinator and Principal Contractor will be appointed. The Applicant will ensure that its own staff, its designers and contractors follow the Approved Code of Practice (ACoP) laid down by the CDM Regulations 2015.

- 3.14.20 Written procedures clearly describing responsibilities, actions and communication channels will be available for operational personnel dealing with emergencies. Procedures will be externally audited, and contingency plans written in preparation for any unexpected complications.
- 3.14.21 The inventory of materials to be stored on the Proposed Development Site will be finalised through the respective detailed designs. However, where storage of hazardous materials exceeds the relevant thresholds, permissions will be sought from the HSE and local planning authority for their storage, under the COMAH and Hazardous Substance Consent regimes respectively. All chemical storage will also be regulated by the Environment Agency through an environmental permit that will be required for the operation of the Proposed Development.
- 3.14.22 As set out in ES Chapter 18 (Major Accidents and Disasters), carbon dioxide is not harmful to human health at low concentrations, it is not flammable, and it will not support combustion. As the concentration of carbon dioxide in air rises, the hazardous effects on people and the environment increase. However, compared with other materials conveyed via major pipelines in the UK, such as natural gas and ethylene, the risks of harm (e.g. of asphyxiation or freeze burns) is relatively low. The key risk relates to its toxicity at elevated concentrations and potential to act as an asphyxiant gas in low lying locations or confined spaces should it displace air from these locations due to its density being higher than that of air.
- 3.14.23 Guidance and best practice information for carbon capture technology and transport via pipeline is available from the Health and Safety Executive (HSE). Carbon dioxide is not currently defined as a dangerous substance under the COMAH Regulations 2015 and the status of the Proposed Development relating to the COMAH Regulations 2015 has not yet been confirmed. Guidance and best practice information for CCP is, however, available from the HSE. The HSE does not currently provide Land Use Planning (LUP) advice for carbon dioxide capture, although for LUP purposes, HSE uses Dangerous Toxic Load (DTL) to describe a substance's airborne concentration and duration of exposure which would produce a particular level of toxicity in the general population. This advice has been considered in designing the Proposed Development including safety distances from high pressure carbon dioxide equipment on the Proposed Development Site.

### **Environmental Management**

- 3.14.24 The Proposed Development will operate under Environmental Permits from the Environment Agency (as variations to the existing Permits of the VPI Immingham CHP Plant) which will stipulate the required environmental monitoring and controls to be employed, including emissions monitoring systems.
- 3.14.25 The Proposed Development will be operated in line with existing environmental management system (EMS) for the VPI Immingham CHP Plant, which is certified to International Standards Organisation (ISO) 14001. The EMS will outline requirements and procedures required to ensure that the Proposed Development is operating to the appropriate standard, including procedures for:
- sampling and analysis of emissions using CEMS prior to discharge from the stacks in accordance with the Environmental Permits;

- storage of chemicals;
- waste management and disposal;
- surface and foul water drainage; and
- planned maintenance

## 3.15 Decommissioning

- 3.15.1 At the end of the Proposed Development's design life, it is expected that the Proposed Development will have some residual life remaining. An investment decision would then be made for each Proposed Development based on the market conditions prevailing at that time. If the operating life of either or both Proposed Development were to be extended, it would be upgraded in line with the legislative requirements at that time.
- 3.15.2 At the end of their operating life, the Proposed will be decommissioned in line with relevant standard and best practices and in accordance with permit conditions and any relevant legal requirements. This will include at minimum safe shutdown, purging and isolation of equipment along with removal of any hazardous chemicals and substances, up to full demolition and restoration of the Site. It should be noted that the PCC will form part of larger operational Humber Refinery site for which it is not the primary activity, and it is therefore conceivable that the operational site could continue to operate with the PCC decommissioned. Surrender of site permits will be undertaken in accordance with all regulatory obligations.
- 3.15.3 The bulk of the relevant plant and equipment will have some limited residual value as scrap or recyclable materials, and the demolition contractor will be encouraged to use materials that could be recycled.
- 3.15.4 Prohibited materials such as asbestos, polychlorinated biphenyls (PCB), ozone depleting substances and carcinogenic materials will not be allowed within the design of the Proposed Development. Other materials recognised to pose a risk to health, but which are not prohibited, will be subject to a detailed risk assessment.
- 3.15.5 Prevention of contamination is a specific requirement of the Environmental Permits for the operation of the Proposed Development and therefore the Proposed Development is being designed such that it will not create any new areas of ground contamination or pathways to receptors as a result of construction or operation. Once the relevant plant and equipment have been removed to ground level, it is expected that the hardstanding and sealed concrete areas will be left in place. Any areas of the Proposed Development which are to be decommissioned that are below ground level will be backfilled to ground level to leave a levelled area.
- 3.15.6 Decommissioning Plans (including Decommissioning Environmental Management Plans (DEMPs)) would be produced at the time of decommissioning each Proposed Development and agreed with the Environment Agency as part of the Environmental Permitting and site surrender process. The DEMPs would consider in detail all potential environmental risks on the Site and contain guidance on how risks can be removed or mitigated during the decommissioning and demolition.

- 3.15.7 The Decommissioning Plans will include outline programmes of works. It is anticipated that it would take up to a year to decommission each Proposed Development, with demolition following thereafter, i.e., taking approximately two years to complete.
- 3.15.8 During decommissioning and demolition there will be a requirement for the provision of office accommodation and welfare facilities.



## 4.0 NEED FOR DEVELOPMENT

- 4.1.1 The UK Government has committed to meeting a legally binding target of ‘net zero’ carbon emissions by 2050.
- 4.1.2 The Energy White Paper: Powering our Net Zero Future (HM Government, 2020) (the ‘EWP’) confirms the Government’s support for Carbon Capture Usage and Storage (‘CCUS’) drawing upon the resource provided by the North Sea and new hydrogen technologies. The Government estimates (Introduction, page 15) that the measures in the EWP could reduce emissions across power, industry and buildings by up to 230 million tonnes of carbon dioxide (Mt CO<sub>2</sub>e) in the period to 2032 and enable further savings in other sectors such as transport. In doing so, these measures could support up to 220,000 jobs per year by 2030. These figures include the energy measures from the Ten Point Plan as well as additional measures set out in the EWP. However, the EWP recognises that more will need to be done to meet key milestones on the journey to Net Zero. The Government’s key policies and commitments to put the UK on the course to Net Zero are grouped under headings including ‘Transform Energy’, ‘Support a Green Recovery from Covid-19’ and ‘Creating a Fair Deal for Consumers’.
- 4.1.3 Chapter 2 of the EWP deals with ‘Power’ with the stated goal being to use electricity to enable the transition away from fossil fuels and decarbonise the economy cost-effectively by 2050. Due to increases in electricity demand a four-fold increase in clean electricity generation is required alongside the decarbonisation of electricity. The EWP states that the Government is not targeting a particular generation mix by 2050 and its view remains that the electricity market should determine the best solutions for very low emissions and reliable supply, at a low cost to consumers/ While the EWP (page 43) states that a low-cost, net zero consistent system is likely to be composed predominantly of wind and solar, in order to ensure the system is reliable, it needs to be complemented by technologies which provide power, or reduce demand, when the wind is not blowing, or the sun does not shine. This includes gas with CCS and short-term dispatchable generation providing peaking capacity. The EWP (page 47) recognises that:  
*“In the power sector, gas-fired generation with CCUS can provide flexible, low-carbon capacity to complement high levels of renewables. These characteristics mean that deployment of power CCUS projects will play a key role in the decarbonisation of the electricity system at low cost.”*
- 4.1.4 The challenge of decarbonising industry is covered at Chapter 5 ‘Industrial energy’ of the EWP, in particular, the need for emissions from industry to fall by around 90% from today’s levels by 2050 if the Net Zero target is to be met (page 118). The EWP (page 120) highlights how about half of all emissions from manufacturing and refining are concentrated in the UK’s major industrial clusters (EWP Figure 8.1). These ‘hubs’ are seen as critical drivers of local and regional economic activity and a vital component of the UK’s national economy. It goes on to state (page 122):  
*“Improved efficiency in the energy performance of buildings and industrial processes will lay the groundwork for the transformation of industrial energy. But we cannot rely on energy efficiency alone to reduce emissions in line with our 2050 goal. Manufacturing industry will need to capture their carbon for onward storage and switch from using fossil fuels to low-carbon alternatives.”*

- 4.1.5 The EWP notes (page 124) that many clusters are located in regions in need of economic revitalisation and that decarbonising those clusters can act as a driver of prosperity for the surrounding areas. Furthermore, that investments in key technologies like CCUS will be crucial to enhancing local economic growth and creating jobs together with prosperity.
- 4.1.6 The EWP confirms that the deployment of CCUS is fundamental to the decarbonisation of energy intensive industries such as steel, cement, oil refining and chemicals. It highlights the role of CCUS in helping to secure the long-term future of these industries and enabling the production of low-carbon hydrogen at scale. It stresses how the UK is in a strong position to become a global technology leader in CCUS, with the potential to store 78 billion tonnes of carbon dioxide. It recognises that deployment of CCUS could create new markets for UK businesses, at home and abroad, as other countries look to meet their emissions reduction commitments and could support 50,000 jobs in the UK by 2030.
- 4.1.7 The UK Government's Net Zero Strategy (2021) expands on key commitments in the Energy White Paper, proposing to deliver "four carbon capture usage and storage (CCUS) clusters, capturing 20-30 Mt CO<sub>2</sub> across the economy, including 6 Mt CO<sub>2</sub> of industrial emissions, per year by 2030". This comprises 6 Mt CO<sub>2</sub> per year to be captured from industrial emissions, implying a commitment of between 14-24 Mt CO<sub>2</sub> per year to be captured from energy sources. Energy intensive industries account for more than 20% of the economy and 1 in 10 jobs in the Humber.
- 4.1.8 More recently, the Government released the British Energy Security Strategy (2022) which seeks to set out "how Great Britain will accelerate homegrown power for greater energy independence." The report supports the objective for low carbon emissions, and is committed to investing in CCUS by providing £1 billion in public investment to decarbonise our industrial clusters.
- 4.1.9 The 'Energy Security Bill', introduced into Parliament on 6 July 2022, seeks to deliver a cleaner, more affordable and secure energy system by growing the UK-based energy market (including the diversity of energy sources) to reduce dependency on fossil fuels. A key aspect of the Bill is to focus on low carbon energy, in particular the role of CCUS technologies and the creation of hydrogen using carbon dioxide captured from the CCUS process (also known as 'blue hydrogen') in achieving the aims of the Bill.

## 5.0 PLANNING POLICY CONTEXT

### 5.1 Introduction

- 5.1.1 This section provides a brief overview of the relevant planning policy and guidance at the local and national level. The Proposed Development has been influenced by these policies and is assessed against at Section 6 of this Planning Statement.
- 5.1.2 The planning application would be determined in accordance with section 70(2) of the Town and Country Planning Act 1990 (as amended), which states that in dealing with applications, local planning authorities shall have regard to the provisions of the statutory development plan and to other material considerations.

### 5.2 Statutory Development Plan

- 5.2.1 The Site is located within North Lincolnshire Council ('NLC'). The following planning policy documents are considered most relevant to the proposed Development:
- North Lincolnshire Core Strategy (Adopted June 2011).
  - North Lincolnshire Local Plan (Adopted May 2003) – Saved Policies.
  - North Lincolnshire Housing and Employment Land Allocations Development Plan Document (Adopted March 2016).

- 5.2.2 The following policies are considered of most relevance:

#### **Core Strategy (2011)**

- 5.2.3 Policy CS1: Spatial Strategy for North Lincolnshire sets out the overarching spatial strategy for growth with one of the key focuses being:

*“part d) Supporting the development of key strategic employment sites at the South Humber Bank, Humberside Airport and Sandtoft Airfield.”*

- 5.2.4 Specifically, this involves:

*“The development of the nationally important South Humber Bank ports will be supported by safeguarding around 900ha of land in and around the port complexes for estuary related development as well as to support the continued growth of the chemical and renewable energy industries.”*

- 5.2.5 Policy CS1 concludes with an overarching objective for:

*“All future growth regardless of location should contribute to sustainable development in particular in respect of those criteria set out in policy CS2 as well as the other policies of the plan. All change will be managed in an environmentally sustainable way by avoiding/minimising or mitigating development pressure on the area’s natural and built environment, its existing utilities and associated infrastructure and areas at risk of flooding.”*

*The implementation of Policy CS1 is supported by Policy CS2: Delivering More Sustainable Development which directs development to the most sustainable locations using a sequential approach.*

*“Any development that takes place outside the defined development limits of settlements or in rural settlements in the countryside will be restricted. Only development which is essential to the functioning of the countryside will be allowed to take place. This might include uses such as that related to agriculture, forestry or other uses which require a countryside location or which will contribute to the sustainable development of the tourist industry.*

*A ‘sequential approach’ will also be applied to ensure that development is, where possible, directed to those areas that have the lowest probability of flooding, taking account the vulnerability of the type of development proposed, its contribution to creating sustainable communities and achieving the sustainable development objectives of the plan. Where development does take place in the flood plain, mitigation measures should be applied to ensure that the development is safe.*

*All future development in North Lincolnshire will be required to contribute towards achieving sustainable development. Proposals should comply with the overall spatial strategy together with the following sustainable development principles:*

- *Be located to minimise the need to travel and to encourage any journeys that remain necessary to be possible by walking, cycling and public transport. It should be compliant with public transport accessibility criteria as set out in the Regional Spatial Strategy*
- *Be located where it can make the best use of existing transport infrastructure and capacity, as well as taking account of capacity constraints and deliverable transport improvements particularly in relation to junctions on the Strategic Road Network*
- *Where large freight movements are involved the use of rail and water transport should be maximised*
- *Contribute towards to the creation of locally distinctive, sustainable, inclusive, healthy and vibrant communities*
- *Contribute to achieving sustainable economic development to support a competitive business and industrial sector*
- *Ensure that everyone has access to health, education, jobs, shops, leisure and other community and cultural facilities that they need for their daily lives*
- *Ensure the appropriate provision of services, facilities and infrastructure to meet the needs of the development, but where appropriate it is to be recognised that a phased approach may not be required on small scale development proposals.*
- *To be constructed and operated using a minimum amount of non-renewable resources including increasing the use of renewable energy in construction and operation*
- *Take account of local environmental capacity and to improve air, water and soil quality and minimise the risk and hazards associated with flooding, and*
- *Be designed to a high standard, consistent with policy CS5, and use sustainable construction and design techniques.”*

- 5.2.6 Policy CS3: Development Limits states “...development outside these defined boundaries [the development limit] will be restricted to that which is essential to the functioning of the countryside. This will include uses such as that related to agriculture, forestry or other uses which require a countryside location or that which will contribute to the sustainable development of the tourist industry”.
- 5.2.7 Policy CS5: Delivering Quality Design in North Lincolnshire sets out the policy for achieving good design and states:  
*“All new development in North Lincolnshire should be well designed and appropriate for their context. It should contribute to creating a sense of place. The council will encourage contemporary design, provided that it is appropriate for its location and is informed by its surrounding context. Design which is inappropriate to the local area or fails to maximise opportunities for improving the character and quality of the area will not be acceptable.*
- *Incorporate the principles of sustainable development throughout the whole design process. This will include site layout, minimising energy consumption, maximising use of on-site renewable forms of energy whilst mitigating against the impacts of climate change; for instance flood risk.*
  - *Create safe and secure environments, which reduce the opportunities for crime and increase the sense of security for local residents through the use of Secured by Design guidance.”*
- 5.2.8 Policy CS6: Historic Environment states the council will promote the effective management of North Lincolnshire’s historic assets through:
- “...
  - *Preserving and enhancing the rich archaeological heritage of North Lincolnshire...*  
*The council will seek to protect, conserve and enhance North Lincolnshire’s historic environment, as well as the character and setting of areas of acknowledged importance including historic buildings, conservation areas, listed buildings (both statutory and locally listed), registered parks and gardens, scheduled ancient monuments and archaeological remains.*  
 ...  
*Development proposals should provide archaeological assessments where appropriate.”*
- 5.2.9 Policy CS11: Provision and Distribution of Employment Land sets out the Council’s support for the for the expansion and improvement of its employment land. The general provisions of this policy state that the Council will support development elsewhere (outside the four broad strategic employment locations) within North Lincolnshire that meet local employment needs and maximises other special locations.
- 5.2.10 Policy CS12: South Humber Bank Strategic Employment Site sets out the approach for fortifying and improving the South Humber Bank Strategic Employment Site (SHBSES) and describes its economic importance to North Lincolnshire and the wider region.
- 5.2.11 Policy CS17 ‘Biodiversity’ seeks effective stewardship of wildlife through (as relevant):

*“1. Safeguarding national and international protected sites for nature conservation from inappropriate development.*

*2. Appropriate consideration being given to European and nationally important habitats and species.*

*3. Maintaining and promoting a North Lincolnshire network of local wildlife sites and corridors, links and stepping stones between areas of natural green space.*

*4. Ensuring development retains, protects and enhances features of biological and geological interest and provides for the appropriate management of these features...”*

5.2.12 Policy CS18: Sustainable Resource Use and Climate Change aims to reduce the size of North Lincolnshire’s ecological footprint, reduce the causes of climate change, and move North Lincolnshire towards a more resource efficient future. The policy consists of 13 parts and states that the Council will promote development that utilises natural resources as efficiently and sustainably as possible. This will include, inter alia:

*“10. Ensuring development and land use helps to protect people and the environment from unsafe, unhealthy and polluted environments, by protecting and improving the quality of the air, land and water.*

*4. Meeting required national reductions of predicted CO<sub>2</sub> emissions by at least 34% in 2020 and 80% in 2050 by applying the following measures on development proposals. Requiring all industrial and commercial premises greater than 1000 square metres to provide 20% of their expected energy demand from on site renewable energy until the code for such buildings is applied nationally. Where developers consider these Codes and targets cannot be met on the basis of viability they will be required to provide proof through open book discussions with the council at the planning application stage.*

*12. Supporting new technology and development for carbon capture and the best available clean and efficient energy technology, particularly in relation to the heavy industrial users in North Lincolnshire, to help reduce CO<sub>2</sub> emissions.”*

5.2.13 Policy CS19: Flood Risk states:

*The council will support development proposals that avoid areas of current or future flood risk, and which do not increase the risk of flooding elsewhere. This will involve a risk based sequential approach to determine the suitability of land for development that uses the principle of locating development, where possible, on land that has a lower flood risk, and relates land use to its vulnerability to flood. Development in areas of high flood risk will only be permitted where it meets the following prerequisites:*

- 1. It can be demonstrated that the development provides wider sustainability benefits to the community and the area that outweigh flood risk.*
- 2. The development should be on previously used land. If not, there must be no reasonable alternative developable sites on previously developed land.*
- 3. A flood risk assessment has demonstrated that the development will be safe, without increasing flood risk elsewhere by integrating water management methods into development.*

*Within the final paragraph, the policy notes that the Council will also seek to reduce the increase in flood risk due to climate change through measures to reduce carbon dioxide.*

5.2.14 Policy CS20: Sustainable waste Management states that the Council will promote sustainable waste management by:

- *Requiring the integration of facilities for waste minimisation, re-use, recycling and composting, in association with the planning, construction and occupation of new development.*

5.2.15 Policy CS25: Promoting Sustainable Transport seeks to ensure that development proposals provide high quality and sustainable transport arrangements and contains a range of transport network and demand management tools. CS27: Planning Obligations states:

*Where a development proposal generates an identified need for additional infrastructure, North Lincolnshire Council will, through the negotiation of planning obligations pursuant to Section 106 of the Town & Country Planning Act 1990 and in accordance with guidance set out in Circular 05/2005, seek to ensure that the development proposal:*

- i. Meets the reasonable cost of new infrastructure and improvements to existing infrastructure made necessary by the proposal in order to support, for example, affordable housing, maintenance payments, highway infrastructure, nature conservation, transport initiatives, utilities, education, community facilities, health, leisure and recreation provision, public art and waste management; and/or*
- ii. Mitigates the impact(s) of the development; and/or*
- iii. Offsets the loss of any significant amenity or resource through compensatory provision elsewhere; and/or*

*b. Provides for the ongoing maintenance of facilities provided as a result of the development.*

## **North Lincolnshire Local Plan Adopted May 2003) - Saved Policies**

5.2.16 There are many policies from the North Lincolnshire Local Plan (2003) that have been 'saved' and continue to inform planning policy and decision making.

5.2.17 Policy IN1 – Industrial Development Location and Uses identifies the South Humber Bank as an area of 740.7 ha for Estuary related B1, B2, B8 uses.

5.2.18 Policy IN3 – Industrial and Commercial Development in the Urban Area, Principal Growth Settlements, South Humber Bank (including North Killingholme Airfield) and Humberside International Airport states B1, B2 and B8 industrial and commercial development in this area will be supported, provided that (as relevant):

- *the development should respect its position and setting within the landscape and be, in particular adjoining residential areas. Landscaped buffer zones shall be provided to separate uses where appropriate.*
- *provision should be made within the curtilage of each industrial site for loading, off loading and 78 North Lincolnshire Local Plan - Adopted Plan May 2003 Industry and Employment vehicle turning facilities.*

- *comprehensive landscaping schemes, including suitable boundary treatment, should be submitted as part of a detailed planning application and be treated as an integral part of the development.*

5.2.19 Policy RD2 Development in the Open Countryside states that development will be strictly controlled and only granted for certain uses, including employment related development, subject to development standards being met, including that it does not have a detrimental impact on the character or appearance of the open countryside, residential amenity or the highway safety.

5.2.20 Policy T2 – Access to Development states that:

*“All development must be provided with a satisfactory access. In larger developments it should be served adequately by:*

- i) being readily accessible by a choice of transport modes; and*
- ii) existing public transport services and infrastructure; or*
- iii) additions or extensions to such services linked directly to the development; and*
- iv) the existing highway network.”*

5.2.21 Policy T3 Transport Statements states that

*“Developers of major schemes will be required to provide transport assessments, which:*

- i) assess the likely modal split of journeys to and from the site; and*
- ii) provide details of proposed measures to improve access to public transport, walking and cycling; and*
- iii) reduce the number and impact of motorised journeys associated with the proposal.*

5.2.22 Policy T11 Protecting Rail Routes states:

*“The existing network of rail freight and passenger routes will be safeguarded. Disused railway alignments will be protected from development where there is a reasonable prospect of their re-use for transport purposes or where there is potential for recreational use.”*

5.2.23 Policy T18 Traffic Management requires traffic management measures to be introduced where there may be impacts on traffic generated and volume, parking provision, amenity and safety.

5.2.24 Policy T19 - Car Parking Provision and Standards states that:

*“Provision will be made for car parking where it would:*

- i) meet the operational needs of businesses; or*
- ii) be essential to the viability of a new development; or*
- iii) improve the environment or safety of streets; or*
- v) meet the needs of people with disabilities; or*
- iv) be needed by visitors to the countryside;*
- v) and comply with Parking Provision Guidelines.”*

5.2.25 Policy LC1 ‘Special Protection Areas, Special Areas of Conservation and Ramsar Sites’, Policy LC2 ‘Site of Special Scientific Interest and National Nature Reserves’ and Policy LC4 ‘Development Affecting Sites of Local Nature Conservation Importance’ seek to protect sites and habitats of varying ecological status and designation and sets out guidance and development standards for proposals to follow. These policies generally state that proposals will not be permitted where they would cause unnecessary harm and/or are likely to affect these sites unless



there is an imperative need for the proposal and/or its need would outweigh the harm, and those impacts are kept to a minimum.

- 5.2.26 LC4 – Development Affecting Sites of Local Nature Conservation Importance states:  
*“Any development or land use change which is likely to have an adverse impact on a Local Nature Reserve, a Site of Importance for Nature Conservation or a Regionally Important Geological Site will not be approved unless it can be clearly demonstrated that there are reasons for the proposal which outweigh the need to safeguard the intrinsic nature conservation value of the site or feature. In all cases where development is permitted which may damage the nature conservation value of the site, such damage shall be kept to a minimum. Where development is permitted the use of conditions or planning obligations to ensure the protection and enhancement of the site’s nature conservation value and other appropriate compensatory measures will be considered.”*
- 5.2.27 LC5 – Species Protection states that *“Planning permission will not be granted for development or land use changes which would have an adverse impact on badgers or species protected by Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981 (as amended).”*
- 5.2.28 LC7 – Landscape Protection states: *“Where development is permitted within rural settlements or within the open countryside, special attention will be given to the protection of the scenic quality and distinctive local character of the landscape. Development which does not respect the character of the local landscape will not be permitted.”*
- 5.2.29 LC12 – Protection of Trees, Woodland and Hedgerows requires proposals for all new development will, wherever possible ensure the retention of trees, woodland and hedgerows.
- 5.2.30 Policy HE9 – Archaeological Evaluation requires that:  
*Where development proposals affect sites of known or suspected archaeological importance, an archaeological assessment to be submitted prior to the determination of a planning application will be required. Planning permission will not be granted without adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed development is likely to affect them.*  
*Sites of known archaeological importance will be protected. When development affecting such sites is acceptable in principle, mitigation of damage must be ensured and the preservation of the remains in situ is a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before and during development.*
- 5.2.31 Policy DS1 – General Requirements states *“A high standard of design is expected in all developments in both built-up areas and the countryside and proposals for poorly designed development will be refused.”*
- 5.2.32 Policy DS7 – Contaminated Land states:  
*“In the case of proposals for development on land known or strongly suspected as being contaminated, applicants will be required to demonstrate that the level of contamination can be overcome by remedial measures or improvements.*  
*Permission will only be granted on contaminated sites where a detailed site survey has been submitted, and a suitable scheme of remedial measures has been agreed to overcome any existing contamination. Conditions will be imposed and/or a planning obligation entered into to*

*secure the implementation of such a scheme at the appropriate time in the development process and to otherwise restrict and control the development.”*

5.2.33 Policy DS9 - Development of Land in the Vicinity of Established Hazardous Installations and Pipelines states:

*“In the significant risk area surrounding a hazardous installation or pipeline planning permission will only be granted for housing or any commercial, industrial, retail or recreational use which introduces a significant number of people into the risk area, where it can be demonstrated that the associated hazards and risks identified with locating in proximity to the installation are acceptable or can be overcome through the imposition of appropriate planning conditions”.*

5.2.34 DS10 - New Hazardous Installations and Pipelines states

*“Planning permission for development which involves the storage of materials or the carrying out of processes that are toxic, highly reactive, explosive or highly flammable will only be granted if the applicant can demonstrate that the proposal will impose no significant development restrictions upon surrounding land users; will not put at risk surrounding residential properties; or prove a risk to other premises in the locality where significant numbers of people regularly congregate.”*

5.2.35 Policy DS11 Polluting Activities states:

*“Planning permission for development, including extensions to existing premises and changes of use, will only be permitted where it can be demonstrated that the levels of potentially polluting emissions, including effluent, leachates, smoke, fumes, gases, dust, steam, smell or noise do not pose a danger by way of toxic release; result in land contamination; pose a threat to current and future surface or underground water resources; or create adverse environmental conditions likely to affect nearby developments and adjacent areas.”*

5.2.36 Policy DS13 – Groundwater Protection and Land Drainage states:

*“DS13 - Groundwater Protection and Land Drainage All development proposals must take account of the need to secure effective land drainage measures and ground water protection in order to control the level of water in the land drainage system.”*

5.2.37 DS14 - Foul Sewage and Surface Water Drainage states

*“The Council will require satisfactory provision to be made for the disposal of foul and surface water from new development, either by agreeing details before planning permission is granted, or by imposing conditions on a planning permission or completing planning agreements to achieve the same outcome.”*

5.2.38 DS15 - Water Resources states:

*Development will not be permitted which would adversely affect the quality and quantity of water resources or adversely affect nature conservation, fisheries and amenity by means of:*

- i) pollution from the development; or*
- ii) water abstraction unless adequate measures are undertaken to reduce the impact to an acceptable level.*

5.2.39 DS16 - Flood Risk has a similar purpose to Core Strategy Policy CS19 and states:

*“Development will not be permitted within floodplains where it would:*

- i) increase the number of people or buildings at risk; or*

- ii) *impede the flow of floodwater; or*
- iii) *impede access for the future maintenance of watercourses; or*
- iv) *reduce the storage capacity of the floodplain; or*
- v) *increase the risk of flooding elsewhere; or*
- vi) *undermine the integrity of existing flood defences.”*

5.2.40 DS17 - Overhead Power Lines and High Powered Electrical Installations

*“The Council will seek to minimise the environmental effects of proposals for overhead power lines of 132kv or over, and high-powered electrical installations. The Council will not support such development within or in locations where the development would have a detrimental impact upon the following areas:*

- i) *Special Protection Areas, Special Areas of Conservation and Ramsar sites;*
- ii) *SSSIs or other statutory nature conservation sites;*
- iii) *Conservation Areas and sites and buildings of historic or archaeological interest, including listed buildings and scheduled monuments;*
- iv) *existing committed or allocated housing areas.*

*In view of the substantial practical, technical and cost disadvantages involved, it is only in exceptional circumstances that the Council will seek to have lines placed underground, where this is not damaging to sites of nature conservation value or archaeological importance. Careful line routing will usually be the most appropriate way to minimise the visual impact of high voltage power lines. To ensure a satisfactory built environment the Council will have regard to the amenity of potential future occupiers in determining applications for development close to overhead power lines*

**Housing and Employment Land Allocations Development Plan (2016)**

5.2.41 The Housing and Employment Land Allocations (‘HELA’) Development Plan Document (‘DPD’) sets out which sites the Council has allocated for future housing development and where new employment opportunities will be located.

5.2.42 Policy PS1 ‘Presumption in Favour of Sustainable Development’ states that: *“When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area”.*

5.2.43 The Site falls within Employment Land Allocation SHBE-1 ‘South Humber Bank’, a 900 hectare site allocation of land along the Humber coast. Policy SHBE-1 is allocated as a strategic site for port activities to take special advantage of its location, adjacent to a deep water channel of the River Humber as an extension to Immingham Port and Humber Sea Terminal. This employment site is a major part of the South Humber Gateway which forms a four-mile area fronting the Humber estuary. Some of the site specific development criteria contained in Policy SHBE-1 are applicable only to high-employment generating uses and/or are closer than the proposed

development to the internationally designated sites along the Humber coast. The following site specific criteria are considered relevant to the proposed development with the remainder being applicable as they relate to greenfield developments of a permanent nature:

- *“Development of the site shall only take place if there has been appropriate consideration given to the international, national and local protected sites for nature conservation. This includes complying with the tests of the European Habitats Regulations (Birds and Habitat Directives).*
- *A Transport Assessment and Travel Plan will be required for all large developments.*
- *An ecological assessment will be required.*
- *Pollution and waste control measures should be implemented wherever practical and relevant to the proposed development.*
- *Use of materials and development works shall be sensitive to the location.*
- *A structural landscape scheme is required as a buffer to limit the visual impact of development and improve the amenity of nearby communities between the western edge of the employment site and the villages of South Killingholme, North Killingholme and East Halton.*
- *On site and off site landscaping schemes and biodiversity enhancement shall be considered within the framework of the South Humber Bank Landscaping Initiative in relation to development proposals*
- *Landscape buffering of at least 15 metres width around the Local Wildlife Sites will be required*
- *A surface water and sewage management solution is required to accommodate development on the employment site to the satisfaction of the North East Lindsey Water Management Board and the Anglian Water Authority.*
- *A Flood Risk Assessment will be required for individual developments on the majority of the site in compliance with National and Local flood risk guidance and Core Strategy Policy CS19.*
- *A Heritage Assessment will be required to demonstrate that the development will have no adverse impact on the historic environment. Particular regard will need to be undertaken of the impact of any proposals upon those elements which contribute to the significance of the Scheduled Monuments to the west of this allocation. Development proposals should ensure that those elements which contribute to their significance are conserved ”*

## 5.3 Other Material Considerations

### Planning for Renewable Energy Development - Supplementary Planning Document

- 5.3.1 North Lincolnshire Council' 'Planning for Renewable Energy Development' Supplementary Planning Document ('SPD') provides more detailed guidance on the existing renewable energy policies in the Local Development Framework ('LDF'). Paragraph 3.10 describes how the South

Humber gateway is ideally located for carbon capture development and the opportunity this presents both environmentally and economically.

5.3.2 Policy 1 - Biodiversity states:

5.3.3 *“Developers should assess the effects of potential renewable energy developments, alone or cumulatively on biodiversity sites, habitats and species and identify measures to avoid or mitigate harm to them and secure their conservation and enhancement. If a scheme, alone and/or in combination with other plans and projects, could have an impact on an internationally designated site developers must submit all relevant information to the council for them to carry out an assessment of the likely significant effects of the scheme in accordance with the Habitats Regulations.*

*Developers should also pay attention to assessing the effects of renewable energy developments, alone and in combination with other development on bats, birds and other mobile species within and around the site. Measures should be identified to avoid or mitigate the harm to these species and secure their conservation and enhancement.”*

5.3.4 Policy 5 - Soil and Hydrology recommends developers to consider the effects of their proposal for renewable energy development on the soil, hydrology, groundwater and water quality in and around a site. Development should avoid harming soils, hydrology and water quality that would have a negative effect on habitats of principal importance for the conservation of biodiversity.

5.3.5 Section 6 identifies the different policy considerations drawing on the existing policy approach in the LDF. Policy 6 Flood Risk states:

*“Developers must provide a Flood Risk Assessment with any renewable energy development proposal of 1 hectare or more in Flood Zone 1 and any proposal in Flood Zone 2 or 3. If proposals are put forward in areas of high flood risk (zone 3), development will be required to pass an Exception Test. This must demonstrate that the development will be safe during its lifetime , without increasing flood risk elsewhere and where possible will reduce flood risk overall. These requirements also apply to proposals for ancillary development related to renewable energy developments.”*

### **National planning policy**

5.3.6 The National Planning Policy Framework (‘NPPF’) was adopted in March 2012 and last updated in July 2021. It sets out the Government’s planning policies for England and how these are to be applied. The policies contained within the NPPF are expanded upon and supported by National Planning Practice Guidance (‘NPPG’), which was first published in March 2014 and has been periodically updated since.

5.3.7 Paragraph 45 requires that: *“Local planning authorities should consult the appropriate bodies when considering applications for the siting of, or changes to, major hazard sites, installations or pipelines, or for development around them”.* Further to this, Paragraph 97 notes that planning policies and decisions *“should promote public safety and take into account wider security and defence requirements by ... anticipating and addressing possible malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate...this*

*includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security.”*

- 5.3.8 Paragraph 110 states that in assessing applications for development, it should be ensured that:  
*“b) safe and suitable access to the site can be achieved for all users”*
- 5.3.9 Paragraph 111 states:  
*“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.”*
- 5.3.10 And Paragraph 112 states that within this context, applications for development should:  
*“d) allow for the efficient delivery of goods, and access by service and emergency vehicles;”*
- 5.3.11 Chapter 12 contains the NPPF planning policy in relation to good design. Paragraph 126 explains that the creation of high quality, beautiful and sustainable buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development.
- 5.3.12 The NPPF sets out its support for renewable energy development in Chapter 14 (Meeting the challenge of climate change, flooding and coastal change). Paragraph 148 states that:  
*“The planning system should support the transition to a low carbon future. It should help to ... support renewable and low carbon energy and associated infrastructure.”*
- 5.3.13 Paragraph 158 goes on to state:  
*“When determining planning applications for renewable and low carbon development, local planning authorities should not require applicants to demonstrate the overall need for renewable or low carbon energy and [should] approve the application if its applications are (or can be made acceptable).”*
- 5.3.14 Paragraph 159 of the NPPF outlines that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future).
- 5.3.15 Paragraph 161 notes that all plans should apply a sequential, risk- based approach to the location of development- taking into account the current and future impacts of climate change- so as to avoid, where possible, flood risk to people and property. The paragraph details that the sequential test should be applied, and if necessary, the exception test. Paragraph 158 explains that the aim of the sequential test is to steer new development to areas with the lowest risk of flooding.
- 5.3.16 Chapter 15 contains policies in relation to the conservation and enhancement of the natural environment. Paragraph 174 states: Planning policies and decisions should contribute to and enhance the natural and local environment by:  
*“a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) 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;*  
*c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*

d) *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*  
 e) *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;...*

5.3.17 Paragraph 180 states that when determining planning applications local authorities should apply the following principle:

*“b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;”*

5.3.18 Paragraph 183 states:

*“Planning policies and decisions should ensure that: a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation); (...)*

*c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.”*

5.3.19 Paragraph 185 Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

*“...mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.”* NPPGs considered most relevant to the Proposed Development include;

- Climate Change; <https://www.gov.uk/guidance/climate-change>
- Air Quality; <https://www.gov.uk/guidance/air-quality--3>
- Renewable and low carbon energy; <https://www.gov.uk/guidance/renewable-and-low-carbon-energy>

## 5.4 Emerging policy

### North Lincolnshire Local Plan (Publication Draft Addendum May 2022)

- 5.4.1 The Council is currently preparing a new Local Plan. Consultation on the Publication draft Local Plan finished on December 2021 and consultation on a subsequent addendum draft local plan ended on 11 July 2022. In accordance with paragraph 48 of the National Planning Policy Framework (NPPF) the policies in this plan may be afforded weight in decision making.
- 5.4.2 This section avoids duplicating the emerging policies which largely replicate and bring forward existing policies, and instead focuses on acknowledging the emerging policies where there are new and/or extensive changes to existing policy that are specifically relevant to the Proposed Development.
- 5.4.3 Policy SS1 Presumption in Favour of Sustainable Development reflects the intent of the NPPF's presumption in favour of sustainable development and HELA Policy CS1.
- 5.4.4 Policy SS3 Development Principles sets out the key development principles all new development will be considered against. It states that all proposals for development in North Lincolnshire should reflect the following key principles (unless in practical terms they are not considered relevant by the case officer):
- e. Minimise the impacts arising from climate change and mitigate against its effect, including, reducing flood risk.*
  - f. Provide high standards of amenity and privacy, by ensuring the impacts of development on adjacent and nearby properties are minimised. These impacts include noise, odour, fumes, dust or other nuisance, or the effects of overlooking or overshadowing.*
  - h. Plan positively and enhance local landscape characteristics, natural capital, geological conservation interests and soils, and avoid, remedy or mitigate any impacts on natural capital features and open spaces.*
  - l. Take account of existing and/or planned infrastructure, and contribute towards the provision of additional infrastructure to ensure that development is well served by physical, social and environmental infrastructure.*
  - n. Contribute towards healthy communities and places, and consider the health impacts of development and the needs of existing and future users."*
- 5.4.5 The emerging Local Plan Policy SS8 also intends to allocate the South Humber Bank as a strategic site allocation. Policy SS10 contains the criteria which the site will be developed in accordance with. The wording replicates the wording of Housing and Employment Land Allocations DPD (2016) Policy SHBE-1.
- 5.4.6 Policy SS11 Development Limits replicates existing Cores Strategy Policy CS3.
- 5.4.7 A Landscape Enhancement Scheme is proposed for the South Humber Bank under Policy DQE2 'Landscape Enhancement', and as shown on the policies map, which states that development will only be permitted where it provides opportunities for landscape enhancement or creation, and that the provision of a landscaping scheme is a pre-requisite for achieving development of a Site, and implementation and management achieved through planning conditions.



- 5.4.8 Further to this, Policy EC4: South Humber Bank Landscape Initiative replicates the wording of Local Plan saved policy LC20.
- 5.4.9 Policy HE1: Conserving and Enhancing the Historic Environment replicates the policy stance of Local Plan saved policy HE9 Archaeology Evaluation.
- 5.4.10 Policy RD1: Supporting Sustainable Development in the Countryside will support development outside of development limits for:
- g. Employment uses where it is an appropriate scale to its location and it respects the character of the surrounding landscape. Proposals should:*
- i. Be within or adjacent to an existing industrial estate or business park; or*
  - ii. Involve the expansion of an existing business; or*
  - iii. Involve the conversion of an existing building; or*
  - iv. Have a functional need to be in that particular location that cannot be met either on a nearby allocation, or on a site that satisfies any of the above criteria.; and*
  - i. New and enhanced infrastructure*
- 5.4.11 Policy DEQ1: Protection of Landscape, Townscape and Views
- 5.4.12 Policy DEQ3: Biodiversity and Geodiversity replicates and consolidates the intent of Local Plan Saved Policies LC1, LC2 and LC4.
- 5.4.13 Policy DQE5: Managing Flood Risk builds upon Core Strategy Policy CS19 and states:
1. *The risk and impact of flooding will be minimised through:*
    - a) *directing new development to areas with the lowest probability of flooding;*
    - b) *ensuring that all new development addresses the effective management of all sources of flood risk;*
    - c) *ensuring that development does not increase the risk of flooding elsewhere; and*
    - d) *ensuring wider environmental benefits of development in relation to flood risk.*

*A site-specific flood risk assessment (FRA) should be provided for all development in Flood Zone 2 and 3. In Flood Zone 1 a FRA should accompany all proposals for development of sites of 1 hectare or more or land which has been identified by the Local Lead Flood Authority as having critical drainage problems or land that may be subject to other sources of flooding where development would introduce a more vulnerable use.*
  2. *The Council will support development proposals within areas at risk of flooding (flood zones 2 and 3 or at risk as shown on the flood hazard maps in the Strategic Flood Risk Assessment), where it meets the following prerequisites:*
    - a) *it can be demonstrated that there are no other sites available at a lower risk of flooding (i.e. that the sequential test is passed). The sequential test will be based on a districtwide area of alternative sites unless local circumstances relating to the catchment area for the development justify a reduced search area, i.e. there is a specific need for the development in that location. The sequential test is not required for sites allocated in the Local Plan, for minor development (as defined in Planning Practice Guidance, paragraph 046 (Reference ID:7-046-20140306) or for change of*

*use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site);*

- b) it can be demonstrated that the development provides wider sustainability benefits to the community and the area, that outweigh flood risk;*
  - c) a flood risk assessment has demonstrated that the development will be safe for its lifetime, taking into account the latest guidance and allowances for climate change, without increasing flood risk elsewhere, has integrated water management methods into the development, and incorporated mitigation measures in line with the Standing Advice set out in the SFRA, which has been agreed between the Council and the Environment Agency;*
- 3. All development proposals, including proposals in flood zone 1, will be permitted providing it is demonstrated that:*
- a) the peak rate of runoff over the lifetime of the development, allowing for climate change, is no greater for the developed site than it was for the undeveloped site;*
  - b) the post-development volume of runoff, allowing for climate change over the development lifetime, is no greater than it would have been for the undeveloped site. If this cannot be achieved, then the maximum discharge from the site should not exceed the calculated greenfield runoff rate for all rainfall events, up to and including the 1% annual probability event plus allowance for climate change;*
  - c) the development incorporates appropriate mitigation so that flooding of property in and adjacent to the development would not occur for 1% annual probability event, with appropriate allowance for climate change, and exceedance flood flow paths are taken into account;*
  - d) the proposals in the first instance consider water re-use measures to encourage the conservation of water before infiltration to manage surface water, wherever this is feasible;*
  - e) The proposal should consider the full separation of foul and surface water flows within the development.*
  - f) the final discharge locations have the capacity to receive all foul and surface water flows from the development into water bodies and into sewers, including discharge by infiltration. Where capacity is not currently available within the public sewer network and/or receiving wastewater treatment facility it can be demonstrated that it can be made available in time to serve the development;*
  - g) there is a management and maintenance plan for drainage and flood risk management infrastructure (where appropriate) for the lifetime of the development, which includes the implementation arrangements for adoption by any public authority, statutory undertaker or management company and any other arrangements to secure the*

*operation and mitigation measures of the scheme throughout its lifetime; the final destination of the discharge complies with the following priority order to: water re-use at point of run-off*

- i) ground via infiltration;*
  - ii) a water body; surface water sewer.*
- h) where appropriate, SuDS have been included in line with the requirements of Policy DQE6 Sustainable Drainage Systems of this Plan.*

5.4.14 Policy DQE7 Climate Change and Low Carbon Living states:

- 1. Proposals for development should be designed to mitigate the impacts of climate change and minimise carbon emissions to meet the climate change challenge.*
- 2. All development proposals should be resilient to climate change and decrease the negative impacts of climate change on neighbouring areas by:[...]*
  - c) through their location, taking into account the risk of flooding from all sources of flooding;*
- 3. All development proposals should promote low carbon living through the reduction of carbon emissions by:*
  - d) maximising the reuse or recycling of materials in new construction and making the best use of existing building and infrastructure;*

5.4.15 Policy WAS6 Waste Management states:

- 1. Proposals for new development should support the efficient use and recovery of resources throughout its lifetime, including during construction, operation and/or occupation. This should include giving due consideration to sustainable waste management.*
- 2. New developments should include:*
  - a) Design principles and construction methods that minimise the use of primary minerals and encourage the use of building materials made from recycled and alternative materials;*
  - b) Measures that support the implementation of the waste hierarchy, including construction and demolition methods that minimise waste production, maximise the re-use and recovery of materials (as far as practicable) on-site and minimise off-site disposal. In major developments the production of a waste audit and the use of Site Waste Management Plans are encouraged; and,*
  - c) Design and layout that complements sustainable waste management by providing appropriate storage and segregation facilities. Proposals for major development that seek to deliver the housing requirement or employment land will be encouraged to incorporate neighbourhood waste management facilities (where appropriate). Any waste management facilities or bin/waste storage should be well designed and integrated into the development in order to reduce impacts on the community and environment. Provision for waste collection should also be reflected in the design and layout of development.*

5.4.16 Policy DM1 ‘General Requirements’ requires that:

“5. Planning permission for development will only be permitted where it can be demonstrated that the levels of potentially polluting emissions, including effluent, leachates, smoke, fumes, gases, dust, steam, smell or noise do not pose a danger by way of toxic release; result in land contamination; pose a threat to current and future surface or underground water resources; or create adverse environmental conditions likely to affect nearby developments and adjacent areas.”

5.4.17 Policy DM3 sets out the emerging policy in relation to environmental protection, which (subject to examination and formal adoption) will replace, consolidate and generally strengthen the saved development management policies DS7 (Contaminated Land), DS9 (Development of Land in the Vicinity of Established Hazardous Installations and Pipelines); DS12 (Light Pollution); DS13 (Groundwater Protection and Land Drainage), DS14 (Foul Sewage and Surface Water Drainage), DS15 (Water Resources):

1. *Development proposals as appropriate to their nature and scale, should demonstrate that environmental impacts on receptors have been evaluated and appropriate measures have been taken to minimise the risks of adverse impacts to air, land and water quality, whilst assessing vibration, heat, energy, light and noise pollution.*

5.4.18 With regards to Air Quality the policy states:

2. *The Council will seek to ensure that proposals for new development will not have an unacceptable negative impact on air quality and will not further exacerbate air quality in the Scunthorpe Town AQMA or contribute to air pollution in areas which may result in a new AQMA. Applicants will be required to provide an air quality impact assessment to demonstrate this.*
3. *The Council will seek to ensure that where a sensitive use is being proposed in an area of known poor air quality, the applicant will be required to provide an air quality impact assessment to demonstrate the development will not result in adverse effects on human health and local amenity. Residential development within the Scunthorpe AQMA will not be permitted where there is evidence of adverse effects on human health and local amenity.*

5.4.19 In relation to Noise pollution the policy states:

6. *Development generating noise which is likely to create significant adverse impacts on health and quality of life and cannot be mitigated and controlled through the use of conditions will not be permitted.*

5.4.20 In relation to Contaminated land:

7. *In the case of proposals for development on land known or strongly suspected as being impacted by contamination, hazardous gases, land instability, of a sensitive end use, the applicant will be required to provide sufficient information that demonstrates that the level of contamination can be overcome by remedial measures or improvements. In these cases permission will only be granted where a phase 1 desk based assessment and detailed site survey has been submitted. Where significant risks to human health and/or the environment are present; planning permission will only be granted in circumstances where*

*a suitable scheme of remedial measures has been agreed that will be obtained via a planning condition and/or legal agreement to overcome any existing contamination.*

5.4.21 In relation to the Water Environment

*10. Development will not be permitted where it would have an adverse effect on the quality or quantity of groundwater resources or watercourses and water bodies. Opportunities for environmental improvement are encouraged, particularly:*

- a) the availability of water to support the development;*
- b) the capacity to effectively and sustainably manage foul and surface water;*
- c) sustainable drainage systems;*
- d) water efficiency\*;*
- e) access to infrastructure and water environments for the purpose of maintenance and monitoring;*
- f) acknowledging the requirements of the Water Framework Directive. (\*The requirement for higher water efficiency standard of 110 l/person/day).*

5.4.22 In relation to Hazardous Installations it states:

*12. Proposals for the development of hazardous installations/pipelines, modifications to existing sites, or development in the vicinity of hazardous installations or pipelines, will be permitted where it has been demonstrated that the amount, type and location of hazardous substances would not pose unacceptable health and/or safety risks.*

5.4.23 Policy ID1 Delivering Infrastructure states:

*1. The Council will require all developments to meet the on and off-site infrastructure requirements needed to support the development and mitigate the impact of the development on the existing community and environment to make it acceptable in planning terms.*

# 6.0 ASSESSMENT OF THE PROPOSED DEVELOPMENT

## 6.1 Introduction

6.1.1 This section of the Planning Statement provides an assessment of the Proposed Development, in order to demonstrate how the Proposed Development has been influenced by and is compliant with relevant planning policy. The key topics are considered to be as follows:

## 6.2 The Principle of Development

### Carbon Capture Technology

6.2.1 The principle of the PCCC Plant has planning policy support at all levels. Although not explicitly referenced in NPPF policy, Paragraph 152 establishes the planning system's overarching objective to support the transition to a low carbon future and support for low carbon energy, associated infrastructure. Paragraph 158 states that applicants should not be required to demonstrate the overall need for low carbon energy and recognises that even small scale low carbon developments play a valuable role in reducing emissions.

6.2.2 Local Planning policy explicitly expresses support for carbon capture technology. NLC Core Strategy Policy CS 18 supports new technology and development for carbon capture, particularly in relation to the heavy industrial users in North Lincolnshire, to help reduce CO<sub>2</sub> emissions. Building on this, the Planning for Renewable Energy Development SPD supplements Policy CS18 identifying the South Humber gateway, where the Proposed Development is located, as being ideally located for carbon capture development.

6.2.3 Achieving sustainable development is the core purpose of the NPPF, this has both an economic, social and environmental objective. This purpose is reflected in NLC Policy CS2 where the achievement of sustainable development requires proposals to contribute to support a competitive business and industrial sector and also account for local environmental capacity and to improve air, water and soil quality and minimise the risk and hazards associated with flooding. This policy intent would be (in part) carried forward in the emerging Local Plan Policy PS1 'Presumption in Favour of Sustainable Development' wherein a positive approach to proposals which improve the economic, social and environmental conditions of the area are considered favourably. As stated previously in this document, and confirmed by the ES, the proposal would allow for favourable socio-economic outcomes in terms of enhanced and continued investment, employment opportunities and has been designed to avoid and minimise adverse impacts on human and environmental health.

### Spatial Plan and Strategic Site Allocation

6.2.4 The SHBSES is a regionally important economic area characterised by energy intensive industry with VPI Immingham LLP being an important supplier of the energy. Local Plan Policy CS12 recognises the need to harmonise future employment related development in the SHBSES with

environmental protection and improvement. Policy SHBE-1 in the HELA sets out a requirement for pollution control measure to be implemented wherever possible, and these requirements will be carried forward in the emerging Local Plan Policy SS10. Emerging Policy SS11 enables development outside of development limits where it requires a countryside location.

6.2.5 The Proposed Development relates to an existing industrial site (the Humber Refinery) and seeks to make the best use of its existing infrastructure and operations to capture CO<sub>2</sub> emissions, thereby being in accordance with the Spatial Strategy and Policy CS11 and SS11.

6.2.6 The purpose of the Proposed Development is to achieve full-scale commercial carbon capture at the CHP Plant as part of the Humber Zero Project. Carbon capture technology will prevent carbon dioxide emissions being released into the atmosphere and mean that industry can grow whilst meeting emissions reduction targets. The Proposed Development is key to being able to reduce carbon emissions and supporting economic growth.

## 6.3 Air Quality

6.3.1 Protection of the natural environment is an important part of the NPPF's environmental objective. Paragraph 174 introduces the planning policies for the protection and conservation of the natural and local environment including preventing new development from contributing to unacceptable levels of air pollution. Paragraph 188 encourages planning decisions to be made on whether a proposed development is an acceptable use of land and should assume that pollution control regimes will operate effectively. Within Core Strategy Policy CS2 the achievement of sustainable development includes taking account of local environmental capacity to improve air quality. Saved Policy DS11 will only permit development where it can be demonstrated that the levels of potentially polluting emissions do not pose a danger.

6.3.2 ES Chapter 6 assesses the impact of the development in terms of air quality during construction (construction dust), operation (process emissions) and decommissioning of the Proposed Development.

6.3.3 The Proposed Development and the surrounding area are not within a declared Air Quality Management Area (AQMA), with the nearest being 12.6km east in Grimsby and is designated for the exceedance of annual mean NO<sub>2</sub> concentration.

6.3.4 The ES identifies that during construction, the Proposed Development is anticipated to generate short-term airborne dust from construction activities and emissions associated with motor vehicle exhaust. In terms of dust and vehicle emissions, other than industry wide standard best practice measures, no specific additional mitigation is necessary for the construction phase of the Proposed Development. The enforcement of these standards would be secured through a condition requiring approval of a CEMP in line with the Outline CEMP enclosed in ES Appendix AA.

6.3.5 The ES identifies that during operation there would be no significant effects on any human or ecological receptors as a result of emissions from the Proposed Development. As such, no specific additional mitigation is necessary for the operational phase of the Proposed Development and there would be no significant effects on human health receptors, subject to the following embedded mitigation measures:

- Emission Limit Value compliance will be met for the operational plant, in accordance with use of Best Available Techniques ('BAT') under the environmental permitting regime;
- design of the stack height to minimise ground level air quality and optimise opportunities for dispersion; and
- emissions control practices which would allow amines to be captured from flue gas and returned to the process train for re-use.

6.3.6 No additional mitigation has been identified as necessary for the decommissioning phase of the Proposed Development and decommissioning effects are predicted to be comparable to, or less than, those assessed for construction activities.

6.3.7 It is anticipated that decommissioning impacts would similarly be similar to those experienced during construction, and therefore no significant effects would be realised on any ecological or human receptors.

## 6.4 Noise and Vibration

6.4.1 Paragraphs 174 and 185 of the NPPF seek to ensure that new development does not contribute to unacceptable levels of noise pollution and land instability, and avoids significant adverse impacts on the health and quality of life. The aims of the NPPF are further upheld in local policy DS11 of the Saved Policies and DM3 of the emerging local plan, the latter of which states that if such affects cannot be mitigated, then development will not be approved.

6.4.2 ES Chapter 7 and Chapter 13 assess the potential noise and vibration impacts of the Proposed Development on residential and other human receptors and ecological receptors during construction, operation and decommissioning, including the cumulative impacts of other committed developments in the future.

6.4.3 The nearest residential receptors identified are approximately 340m from the Proposed Development, and are likely already accustomed to industrial noise sources given the character of development in the locality.

6.4.4 The Proposed Development would aim to meet the 'ABC' construction noise limits defined by British Standard (BS) 5228 and achieve +5 dB above the background sound level, where practicable, during operation.

6.4.5 As explained in ES Chapter 4, the construction programme and working hours are expected to occur between normal working hours (7am-7pm Monday to Friday; 7am-1pm Saturdays, with no working on Sundays or bank holidays). However, it is likely that some construction works may need to take place outside of the normal working hours and could be 24/7, limited to manage critical periods where required. Where on-site works are to be conducted outside the normal construction working hours, they will comply with any restrictions agreed with the local planning authority, in particular regarding control of noise.

6.4.6 Noise during construction may also arise from construction vehicles however is anticipated to result in negligible adverse (not significant) effects on local residential noise sensitive receptors



- 6.4.7 The ES concludes that the impacts of construction noise on noise sensitive receptors are predicted to be negligible or minor adverse (not significant), with the exception of one noise sensitive receptor which may experience major adverse (not significant) effects .
- 6.4.8 There are no residential receptors in close proximity to the Proposed Developments which have the potential to be affected by construction vibration in terms of effects on amenity and damage to buildings and structures. Piling activities are expected to occur and execution details would be produced in due-course. If other heavy earthworks and vibration producing activities are to occur, this would be subject to further consideration once construction methods and requirements are known. The impacts on existing buildings within the Site would be within the control of the Applicant and effectively managed by the Applicant and their contractor.
- 6.4.9 The Outline CEMP submitted with the application includes measures to mitigate noise impacts which are detailed further in ES Chapter 7, and broadly include: undertaking some construction activities outside of these normal working hours, abiding to NLC agreed construction noise limits, use of plant which complies with UK Noise emission requirements, hydraulic techniques for breaking, use of lower noise piling, off-site prefabrication of components and appropriate routing of construction traffic, where reasonably practicable; and informing residents ahead of noisy works and ongoing monitoring (to name a few). The mitigation measures would be agreed with NLC and secured by way of condition for a final CEMP prior to commencement of works. This could include a detailed noise and vibration assessment (as needed).
- 6.4.10 The Proposed Development would be operated in accordance with Environmental Permits as regulated by the Environmental Agency, and operational noise limits would be secured by way of planning condition. ES Chapter 7 concludes that, without mitigation, the Proposed Development would have negligible adverse (not significant) to moderate adverse effects (significant) in terms of noise to residential and sensitive receptors during operation, aiming for +3 dB above the background sound level, where practicable. Further to this, the detailed design phase would incorporate measures such as appropriate plant, building cladding, silencers / attenuators (where needed) to minimise noise of a tonal, impulsive or intermittent.
- 6.4.11 The traffic generation associated with the operational phase of the Proposed Developments is predicted to be limited (as explained in the sub-section Traffic and Transport below) aiming for a rating of + 3dB above background sound levels and if this is not possible, the rating level would be +5 dB above the background sound level, and therefore would not result in unacceptable impacts to amenity.
- 6.4.12 The operational vibration impacts would not be significant given the distances of the Proposed Development to surrounding residential development and sensitive receptors. It is not anticipated that there would be venting of CO<sub>2</sub> or steam lines during normal operation, being limited to emergency situations. Should this occur, it would be controlled by way of Environmental Permit and would not result in significant adverse impacts in terms of noise amenity.
- 6.4.13 The impacts experienced during decommissioning in terms of noise amenity and vibration would be similar or less than to those during construction and would be secured by way of planning condition for a Decommissioning Environmental Management Plan (DEMP).

- 6.4.14 Following further detailed assessment and CEMP and appropriate mitigation is employed, the residual effects during construction are expected to be up to minor adverse (not significant).
- 6.4.15 Following the application of practical sound mitigation to reduce the relevant noise at source, the residual effects during operation are expected to be minor adverse (not significant) or less.
- 6.4.16 The control and monitoring of noise during construction and operation would be secured by a planning condition.
- 6.4.17 Cumulative effects are discussed in sub-section Cumulative and Combined Effects and ecological effects are discussed in sub-section Biodiversity and Ecology of Section 6 of this Document.

## 6.5 Traffic and Transport

- 6.5.1 The NPPF and Core Strategy Policy CS 25 have an overarching presumption in favour of promoting sustainable transport requiring a development to manage its impact on the transport network. Further to this, NPPF Paragraph 111 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe. Saved Policy T2 and T18 requires a development to ensure that satisfactory access can be provided to the site and that traffic management measures are implemented to address traffic generation, safety, amenity and parking demand.
- 6.5.2 ES Chapter 8 assesses the impact of the Proposed Development in terms of traffic and transport during construction, operation, and decommissioning phases, and Appendix 8A includes the Transport Assessment.
- 6.5.3 It anticipates that the peak of HGV traffic associated with construction of the Proposed Development would occur in 2026 and the peak for overall traffic generation in 2027. The anticipated impact of the Proposed Development on surrounding transport links, being the key surrounding roads of the A180 (between A15 and A1173 junction), A160 and A15, Humber Road, Rosper Road and Eastfield Road, would experience a negligible (not significant) effect as a result of the construction of the Proposed Development. This includes the impacts on Rosper Road which, despite a 20.1% increase in HGV traffic during the peak month for HGV traffic generation will experience a low magnitude and negligible (not significant) effect.
- 6.5.4 Furthermore, it is anticipated that all transport links examined (as stated above) would experience a negligible (not significant) effect on road safety during the construction of the Proposed Development, achieving consistency with NPPF Paragraph 111.
- 6.5.5 In terms of severance, the surrounding road linkages would experience a negligible (not significant) effect during construction.
- 6.5.6 Pedestrian and cycling linkages are generally expected to experience minor adverse (not significant) or less effects, with moderate adverse (significant) effects at: Rosper Road, A160 near Killingholme and A160 south of the Humber Refinery, and Humber Road. However, these areas do not contain pedestrian or cycle facilities and are not considered to be appropriate routes for these modes of transport access to the Proposed Development. In addition, these effects are temporary in nature. As such, the effects are considered not significant.

- 6.5.7 A mitigation strategy to minimise impacts of the Proposed Development will be delivered through the CEMP (see Outline CEMP in Appendix 4A in Volume II of the ES), Construction Traffic Management Plan (CTMP) (Appendix 8B in Volume II of the ES) and Construction Worker Travel Plan (CWTP) (Appendix 8C in Volume II of the ES)
- 6.5.8 The residual effects of the additional HGV traffic generated at every transport link stated above, severance impacts and pedestrian and cycling linkages, and accidents and safety would be negligible (not significant) as a result of the construction period for the Proposed Development.
- 6.5.9 The period assessed for HGV traffic is also the worst-case scenario, during the absolute peak of traffic generation for HGVs. This period is expected to be very short lived so even the minor effects taking place on Rosper Road where HGV numbers are expected to be 200+ HGV movements daily are only expected to last around 6 months.
- 6.5.10 During the operational phase, it is expected that 10 HGV and 100 vehicular trips associated with maintenance of the proposed development would be generated across both the Site and the Phillips 66 site. Assuming this would be split equally across each site this could be easily accommodated by the existing highway network around the site. Moreover, maintenance would be expected to occur at regular intervals and be scheduled in advance further reducing the likelihood of disruption to the highway network.
- 6.5.11 In light of the above, it is therefore considered the proposal would not have an adverse impact on the highway network and would provide safe access/egress meaning it is consistent with national and local policy with regards to traffic and transport.

## 6.6 Water Environment and Flood Risk

- 6.6.1 National and local policies adopt a risk-based 'sequential approach' to ensure that development is directed to those areas that have the lowest probability of flooding, taking into account current and future impacts of climate change, and the vulnerability of the type of development, its contribution to creating sustainable communities and achieving sustainable development objectives. If it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), it would need to satisfy the exception test in order to be permitted, which requires that the development provides wider sustainability benefits to the community to outweigh flood risk, would not increase flood risk elsewhere and would reduce flood risk overall through new or improved flood defences and improved drainage. National Policy requires the exception test be informed by a Flood Risk Assessment (FRA) and Local policy requires that new development be accompanied by a FRA where it is located in Flood Zone 2 or 3.
- 6.6.2 In accordance with National and local policy, an FRA has been prepared and has informed Chapter 9 of the ES which accompanies this application, both of which provide an assessment of the effects of the Proposed Development on flood risk and drainage. The FRA identifies the water features that could potentially be affected include local land drains (located adjacent to the Sites boundaries), NELIDB watercourses (South Killingholme Drain - Watercourse 9 and 9A), the Humber Lower (Humber Estuary) and the Rosper Road Pools.

- 6.6.3 The Proposed Development is located in Flood Zone 3, the zone at highest risk of flooding. The Site is within and immediately to the south of the operational VPI Immingham CHP Plant and the existing land use is grassland, areas of hardstanding (previous construction laydown area for the CHP Plant), existing below ground utilities, and a drain (South Killingholme Drain).
- 6.6.4 The Proposed Development is considered to be 'Essential Infrastructure', and in accordance with the NPPF Planning Practice Guidance (PPG) may be permitted in Flood Zone 3 where it passes the Exception Test.
- 6.6.5 The South Killingholme drain, which passes through the Site, would be diverted to the south of the Proposed PCC Plant.

### **Flood Risk**

- 6.6.6 During construction, the temporary construction laydown areas, parking areas, and other areas of hardstanding may result in localised and temporary changes in flood risk however these effects would not be expected beyond the Site boundaries. As such, would not be any significant adverse impacts to off-site receptors such as local land drains, watercourses and the Humber Estuary. This is subject to mitigation and avoidance measures being employed as detailed in Chapter 9 of the ES.
- 6.6.7 The detailed CEMP will incorporate measures aimed at preventing an increase in flood risk during the construction works, and as a precaution, flood resilience measures would be incorporated into the final design, such as containment of storage areas, emergency response procedures and implementation of a Surface Water Management Strategy.
- 6.6.8 The flood resilience measures adopted during the construction phase would remain in-situ over the operational life of the Proposed Development and it is not expected that any watercourses would be affected during the operational phase.
- 6.6.9 Any surface water drainage would continue to be via the South Killingholme Drain which would be diverted as part of the Proposed Development, as mentioned previously. Construction techniques involve in the drain diversion would follow best practice, including maintaining the existing channel throughout the construction of the diversion to prevent temporary changes to flood risk and maintaining the existing channel capacity to prevent an increase to flood risk upstream or downstream.
- 6.6.10 Surface water discharge would be restricted to the greenfield runoff rate via a holding / balancing lagoon which would accommodate an estimated storage for a 1 in 100 year event with 20% allowance for climate change. Other SuDS techniques, such as swales, permeable paving and soakaways, to attenuate flow and maximise infiltration would be considered at the detailed design stage.

### **Site Drainage and Water Quality**

- 6.6.11 Surface water discharge from the developed part of the Site is via the South Killingholme Drain via a separating pond and tidal flap gate near Rosper Road. The undeveloped part of the Site has no existing formal surface drainage system. The South Killingholme Drain will be diverted within the Site during the construction phase as a 'like-for-like' replacement along the southern boundary of the site in an open channel, however, is subject to further detailed design. The diversion design

will incorporate input from a suitably qualified person with relevant geomorphological experience and be informed by geotechnical survey. The diversion will be subject to consent from the North East Lindsey Internal Drainage Board (NELIDB) and Environment Agency, and as such may not need to be a condition if planning permission is approved. Notwithstanding, the effects on water quality of the Proposed Development on the South Killingholme Drain and Rosper Road Pools is anticipated to be negligible to minor adverse (not significant).

- 6.6.12 An outline CEMP has been submitted with this planning application and includes mitigation measures for pollution to surface waters and flood risk during construction. All construction works would be completed in accordance with a detailed CEMP which would be secured by way of planning condition and would be in accordance with the outline CEMP and relevant best practice guidance including the Guidance for Pollution Prevention (GPP). Further to the mitigation measures within the detailed CEMP, there would be construction staff awareness and training of potential impacts to water features arising from construction and procedures to follow in the event of accidental pollution, and the implementation of Pollution Prevention Plans for accidental water pollution incidents (secured by planning condition) and appropriate discharge/ disposal of site runoff.
- 6.6.13 During the operational phase, the Proposed Development would slightly increase the area of impermeable surfaces at the Site. A number of the impact avoidance measures employed during construction would be remain and be maintained through the contractors Environmental Management System (EMS).
- 6.6.14 A conceptual drainage strategy has been prepared for the Site and is described in detail within the Flood Risk Assessment (Appendix 9A of ES Chapter 9). It includes drainage systems and measures to manage the following discharge / drainage categories: stormwater drain, waste water oily drain, amine drain, and contaminated firewater.
- 6.6.15 Any surface water drainage would continue to be at greenfield rates via the South Killingholme Drain which would be diverted as part of the Proposed Development, as mentioned previously.
- 6.6.16 Foul water generated from the Proposed Development would be collected and treated as per the existing arrangements. This includes being collected and treated on-site before being discharged into the surface water drainage system and the South Killingholme Drain, with any solids being removed for off-site disposal by a suitably qualified waste management contractor.
- 6.6.17 Potentially hazardous chemical substances would be isolated from surface and foul drainage systems, such as through appropriate bunding / kerbing. Amine would be separated from the stormwater system and would be tankered for off-site treatment and disposal. Contaminated fire water would either be disposed off-site (in accordance with waste management legislation) or contained onsite within kerbed and banded areas, then treated and discharged to surface water in accordance with Environmental Permits.
- 6.6.18 The drainage measures would all be subject to final detailed design and the Applicant is prepared to accept a planning condition to secure the final drainage details for the Site.
- 6.6.19 A detailed Decommissioning Environmental Management Plan (DEMP) would be prepared to identify required measures to prevent pollution during the decommissioning phase of the

proposed Development. It is anticipated that the impact avoidance measures would be similar to those in the construction phase.

### **Additional Water Demands**

- 6.6.20 Water demand from the Proposed Development has been reduced as far as practicable to approximately an additional 10% water demand by utilising air cooling for the majority of operations. However, water required for cooling of the CO<sub>2</sub> condenser cannot be entirely avoided.
- 6.6.21 The additional water is intended to be sourced from Anglican Water, and therefore no effects are anticipated on the groundwater unit. In the event that the abstraction were to be from the underlying Aquifer, a further assessment will take place to identify the potential effects on both the groundwater unit, and the base flow to surface water receptors.

### **Morphological Changes Associated with Drain Diversion**

- 6.6.22 The proposed diversion of South Killingholme Drain Branch 1 (low importance) has the potential to result in a permanent loss of riparian zone, substrate and habitats along the drain. Although the channel is of low morphological value, due to historic realignment and artificial cross-sections, there still remains some potential for habitats within the channel.
- 6.6.23 A Water Framework Directive (WFD) Screening and Scoping Assessment and accompanies Chapter 9 of the ES, which concludes there to be an overall minor adverse (not significant) effect on a low importance water feature.

### **Conclusion**

- 6.6.24 Chapter 9 of the ES concludes that, taking account of the surface water drainage system and flood resilience measures, most effects during construction, operation and decommissioning are assessed as generally being 'negligible' (not significant). This is with the exception of suspended sediments during construction in the South Killingholme Drain which is classified as 'minor' adverse' (not significant). No additional mitigation is identified as being necessary and it is considered that there would be very limited potential for some residual risk to the water environment associated with the construction, operation and decommissioning of the Proposed Developments
- 6.6.25 Further to this, the FRA (ES Appendix 9A) concludes that the Proposed Development would not increase the risk of flooding from fluvial, tidal, groundwater or overland flow sources.

## **6.7 Landscape and Visual Amenity**

- 6.7.1 Protecting and enhancing valued landscape is an important part of NPPF's environmental objective. Policy 15 (Conserving and enhancing the natural environment) requires that the environment should be enhanced through several measures, including:
- *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;*
  - *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*

- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- 6.7.2 Relevant local policy from the North Lincolnshire Cores Strategy (adopted June 2011) includes Policy CS5 (Delivering Quality Design), Saved Policy RD2 and HELA Policy SHB Landscape Initiative. Relevant policies from the North Lincolnshire Local Plan Publication Draft Addendum Plan (adopted 2022) include Policy DQE1, DQE11, DQE12 and EC4.
- 6.7.3 Additionally, the Countryside Design Summary (CSC) for North Lincolnshire (Estell Warren, 1999) forms a suite of Supplementary Planning Guidance (SPG) documents to be used in conjunction with saved policies of the North Lincolnshire Local Plan.
- 6.7.4 ES Chapter 11 undertakes a Landscape and Visual Impact Appraisal to identify the likely significant effects of the proposed development during construction and operation.
- 6.7.5 The Proposed Development is covered by National Character Area (NCA) Profile: 41 Humber Estuary (Natural England, 2013) and NCA Profile: 42 Lincolnshire Coast and Marshes which lies to the west of the Study Area as illustrated on Figure 10.2 (ES Volume II). It is classified as being of 'medium' landscape value and 'medium' landscape sensitivity. The likelihood of significant adverse landscape effects on NCA 42 is considered negligible, as a result of the scale of the NCA, limited intervisibility and the distance from the Proposed Development.
- 6.7.6 At the local scale, the North Lincolnshire Landscape Character Assessment and Guidelines (Estell Warren, 1999) characterises the Site within the 'Humber Estuary' Landscape Character Area (LCA) and within the 'industrial landscape' local landscape type (LLT) which has a 'very low' landscape value due to its low landscape condition, low levels of natural and cultural heritage and low levels of recreational opportunities. The LLT is described as a flat landscape which is mainly developed for large scale industry with pockets of reclaimed arable farmland and plantation woodland with development resulting in relatively chaotic landscape which lacks unit. It is classified as having a 'low' landscape sensitivity rating.
- 6.7.7 The potential landscape impacts of the Proposed Development primarily relate to the visibility of proposed structures (temporary and permanent), including how this affects the perceptual qualities and tranquillity of a character area. In the case of the construction phase of the Proposed Development, this will relate to the following:
  - movement of plant and heavy goods vehicles, both within the Proposed Development and in the surrounding area;
  - temporary stockpiling of 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 new stacks; and
  - external lighting to illuminate site operations after dark associated with the Proposed Development.
- 6.7.8 In the case of the operational phase of the Proposed Development this will relate to the following:

- introduction of permanent large-scale structures including the buildings (including stack and absorber);
- introduction of other permanent large-scale structures; and
- presence of plumes from the stacks

6.7.9 Despite the potential construction and operational effects stated above, the ES concludes that the Proposed Development would be congruous with its context. It is considered that these effects would be limited to the localised landscape immediately adjacent to the Site and that there is low potential for the surrounding landscape character to be adversely affected.

6.7.10 Air quality modelling results show that the plumes from the proposed VPI absorber stacks are predicted to be visible for up to 85% of the time, with average plumes being up to 123 m long, that is slightly longer than the stack height. Visible plumes are predicted to be longer than the stack height for up to 34% of the time.

6.7.11 Moderate adverse (significant) visual amenity effects have been assessed for Viewpoint 3 (Marsh Lane, Kilingholme) for residential and PRoW users during construction and operation of the Proposed VPI Development. The opportunity for mitigation of the visual effects of the Proposed VPI Development at Marsh Lane is limited due to the size and scale of the Proposed VPI Development. It is considered that the addition of landscape features such as trees and woodland would not be effective in reducing these effects on visual amenity. The assessment has determined that single residential and recreational receptor Marsh Lane (Viewpoint 3) is likely to experience significant short-term adverse effects during construction as a result of the close distance and limited intervening vegetation. The impact on receptors at Marsh Lane (Viewpoint 3) would reduce to not significant during operation. No further significant effects have been assessed for the Proposed Development during construction or operation.

6.7.12 The impacts on landscape character and visual amenity arising as a result of decommissioning of the Proposed Development is considered (using professional judgement) to be similar to those identified at the construction stage. For landscape this is as a result of the scale and nature of the Proposed Development in relation to the existing industrial structures and complexes present in the wider landscape and the large-scale of the LCA. For visual amenity, this is as a result of the visibility of decommissioning and demolition activities not being prominent for the majority of viewpoints as a result of long-distance views and, intervening vegetation.

6.7.13 Despite the potential construction and operational effects stated above, the ES concludes that the Proposed Development would be congruous with its context. It is considered that these effects would be limited to the localised landscape immediately adjacent to the Site and that there is low potential for the surrounding landscape character to be adversely affected.

6.7.14 Accordingly, the Proposed Development is considered to be consistent with national and local policy with regards to landscape and visual impacts on amenity.

## 6.8 Cultural Heritage

6.8.1 Conserving and enhancing the historic environment is an important part of the NPPF's environmental objective. Paragraph 194 requires developers to submit an appropriate desk-



based assessment, and where necessary, a field evaluation for Sites with, or the potential to include, assets of archaeological interest. Core Strategy Policy CS6, Saved Policy HE5 and emerging Policy HE1 require development to preserve and enhance the rich archaeological heritage of North Lincolnshire and for archaeological assessments to be provided, as appropriate. Emerging Policy HE1 requires development to take every practical and reasonable step to protect and enhance (where possible) archaeological remains; to undertake appropriate and proportionate desk based assessments to understand the potential for significance of remains and any impact on them; and that in-situ preservation of such sites is preferred, however, in instances where this is not justified, adequate provision for excavation and recording is required.

- 6.8.2 ES Chapter 12 includes a Cultural Heritage Desk-based Assessment, which in addition to a programme of previous ground investigations and archaeological works in the vicinity of the Site, considers matters of cultural heritage including above ground-built heritage and archaeology in accordance with national and local policy requirements. The previous ground investigations (2000, 2013 & 2016) and archaeological works (various dates between 1989-2009) undertaken included geotechnical and geophysical surveys, trial trench evaluation and paleoenvironmental evaluation.
- 6.8.3 The Study Area for the collation of information on heritage assets was defined by a 1km buffer from the Site Boundary for all heritage assets and a 5km buffer for designated heritage assets only and have been agreed with the Historic Environment Officer at NLC.
- 6.8.4 The Site and its environs is heavily industrialised, however, it does sit in an area of several archaeological and cultural heritage assets. Despite this, there are no designated or non-designated heritage assets, Schedule Monuments, Registered Parks and Gardens or conservation areas on or within the Site. There are a number of / 33 listed buildings (Grade I, II and II\*) within the Study Area, including 4 which are within 1km, and 16 non-designated buildings within 1km of the Site.
- 6.8.5 There are no designated archaeological assets within the 5 km of the Site. The northern half of the Site has been industrial developed as the VPI Immingham CHP Plant and the ground underneath was heavily disturbed as part of these works. The southern half of the Site appears to be relatively undisturbed with known assets being palaeoenvironment evidence of the ancient foreshore, an Iron Age/ Roman settlement, Bronze Age–Iron Age activity and the remains of land boundaries and field systems associated with the Medieval use of the land. There is also the potential for unknown below ground assets. As such, the Proposed Development has the potential for adverse impacts upon both unknown and known archaeological assets within the southern portion of the Site only.
- 6.8.6 The ES confirms that the Site does not fall within the setting of any listed buildings, Registered Parks and Gardens, or Scheduled Monuments, and would blend into the existing industrial landscape of the surrounds. As such, the Proposed Development would not adversely impact any built heritage assets during the construction and operation phases.
- 6.8.7 In terms of archaeological assets, it is expected that during the construction phase of the Proposed Development there would be the partial loss of archaeological material from the ancient foreshore and associated paleochannels and deposits, and Iron Age– Roman Settlement assets

in the southern portion of the Site, and possible Bronze-Age-Roman Settlement Activity (if present). The construction works are not expected to result in any significant impacts to Medieval–Post Medieval ridge and furrow activity and field boundary ditches or historically important hedgerow and boundary ditches within the Site.

- 6.8.8 A programme of archaeological mitigation and investigation (based on the results of the previous evaluation and investigation works) would be adopted to mitigate against and reduce the significance of the effects of the above-stated impacts, as mitigation by ‘avoidance’ and ‘in-situ preservation’ would not be achievable. Following this, any further mitigation that would need to occur would be determined in liaison with the Heritage Environment Officer for North Lincolnshire Council.
- 6.8.9 Further mitigation measures would include a combination of the following, all of which would be implemented in a manner proportionate to the Proposed Development and, the anticipated archaeological remain/s (where present):
- Intrusive investigation and recording works, the location and extent of which would be informed by previous work options – includes such things as strip, map and record.
  - Monitoring – archaeological monitoring of all construction works.
  - Topographic survey / historic landscape survey.
  - Publication - proportionate publication of all work undertaken.
- 6.8.10 During the operational phase, the Proposed Development would not result in adverse impacts on any designated and non-designated archaeological assets and remains. Despite the potential visibility of the Proposed Development, it would blend into the existing industrial landscape and would not have any effect on the understanding and appreciation of the setting of any archaeological assets identified.
- 6.8.11 Accordingly, the Proposed Development is considered to be consistent with national and local policy with regards to the historic environment, and the built heritage and archaeological assets.

## 6.9 Biodiversity and Ecology

- 6.9.1 Section 15 of the NPPF includes the requirement for plans to protect and enhance biodiversity by:
- Identifying and safeguarding local wildlife-rich habitats and wider ecological networks including international, national and local sites of importance for biodiversity and corridors that connect them.
  - Promoting the restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species.
  - Pursuing opportunities for securing measurable net gains for biodiversity.
- 6.9.2 Core Strategy Policies CS5, CS16 and CS17 relate to the protection of biodiversity resources, the maintenance of wildlife networks and green corridors and ensuring ecological enhancement through good design, respectively. Further to this, Saved Policy LC5, HELA Policy SHBE-1 South

Humber Bank and emerging Local Plan Policy DQ3 set out the requirements of development to mitigate impacts on biodiversity and ecology, including to give appropriate consideration to international, national and local protected sites for nature conservation and to undertake an ecological assessment.

- 6.9.3 Chapter 13 of the ES provides an assessment of the effects of the Proposed Development upon ecology and biodiversity. The assessment of effects was informed by a number of ecological surveys of the Site (ES Appendix 13A).
- 6.9.4 The Site is not subject to any nature conservation designations, with the nearest designated sites being the Humber Estuary SSSI, SPA, SAC and Ramsar site, located approximately 1.6km to the north-east at its nearest point. Other important ecological features include the Humber Estuary EMS, Killingholme Haven Pits SSSI and LWS, Rosper Road Pools LWS, Burkinshaw's Covert LWS, Mayflower Wood Meadow LWS and Eastfield Road Railway Embankment LWS.
- 6.9.5 The Site predominantly comprises the VPI Immingham CHP Plant operational area and a large mosaic of habitat types to the south.
- 6.9.6 The most abundant habitats on the Site are nutrient-rich and species-poor grassland. It is evaluated as being of Local nature conservation value but is elevated to County level value due to its large area and the habitat it provides for the assemblage of S41 birds, S41 small heath butterfly and opportunities for foraging bats.
- 6.9.7 In the south of the Site (immediately to the south of the VPI facility) is a large area of broken ground (around 4ha) that is developing a range of early successional 'open mosaic habitats' (OMH), which is of Local nature conservation value, given the high proportion of bare ground.
- 6.9.8 A broadleaved tree belt runs along the railway and is encroaching into the south-west of the Site which has Site level value for nature conservation.
- 6.9.9 There are no permanent waterbodies on the Site. South Killingholme Drain runs through the Site west-to-east and has Site level value for nature conservation. A roadside drain runs along the western side of Rosper Road and has Negligible nature conservation value.
- 6.9.10 There were no S41 species, or nationally rare or scarce plants species found and the plant assemblage of the Site is evaluated as being of Site level value for nature conservation.
- 6.9.11 The bulk of the Site provides few opportunities for a rich invertebrate assemblage or scarce species, and no dingy skipper or wall brown butterfly colonies were found. The area between South Killingholme Drain and the existing CHP Plant comprises mosaics that suggest at least a moderate invertebrate assemblage could be present, although it is considered unlikely this area supports permanent colonies of either dingy skipper or wall butterfly. Small heath butterfly (an S41 species) was present in the south-eastern part of the Site where the grasses were finer and is a high priority species for conservation efforts. The Site is likely of County nature conservation value for small heath butterfly.
- 6.9.12 The closest records for GCNs are for ponds approximately 1.1km north of the Site however, in 2015, the population was translocated to a new receptor area approximately 2.2km northwest of the Site. Water sampling (eDNA) results dated 2021 and 2018 confirm that GCNs are absent from all suitable waterbodies with habitat connectivity to the Site.

- 6.9.13 All the birds recorded are relatively common, widespread and typical of the habitats at the Site, and includes Schedule-1 species, S41 Species of Principle Importance, Red list and Amber list species. The Site is evaluated as being of Local nature conservation value for its breeding bird assemblage.
- 6.9.14 The Site comprises a mosaic of brownfield land and grassland and scrub and therefore there is no suitable habitat within the Site boundary for feeding, roosting or loafing wintering/passage SPA or Ramsar site bird species. The Site is therefore not considered functionally-linked to the Humber SPA for SPA or Ramsar site birds and is evaluated as being important at a Site level for its winter bird assemblage.
- 6.9.15 The Site provides no roosting opportunities for bats and limited foraging opportunities and the woodland belt along the railway line would be retained and therefore the ES concludes this species is likely to be resilient to the impacts of the Proposed Development.
- 6.9.16 Taking account of good practice and the proposed mitigation measures, the potential effects for the construction phase (Table 13.15 of Chapter 13) are assessed as being negligible (non-significant) for designated site (SSSI, SCA, SPA, Ramsar, LWS) habitats and species they support. This is with exception of visual impacts / disturbance for wintering and passage birds using the functionally-linked land on the opposite side of Rosper Road fields which are identified as having a minor adverse (non-significant) impact.
- 6.9.17 In terms of non-designated site habitats and species, the effects on breeding bird assemblages, due to the loss of scrub along the railway line, and on bat assemblages, due to the loss of foraging opportunities, would have minor adverse (non-significant) effects.
- 6.9.18 The following are expected to result in a minor adverse (significant) impact:
- Site clearance of grassland on the foraging opportunities for local bats.
- 6.9.19 The following are expected to result in a moderate adverse (significant) impact, before the introduction of mitigation measures:
- Loss of OMH on future nesting opportunities for the lapwing and little ringed plover.
  - loss of trees / scrub along the railway line which may result in a minor loss of nesting habitat for some bird species. Should this occur, it would subject to mitigation measures requiring full legal compliance.
  - Site clearance of grassland on the small heath butterfly (a S41 species) and future nesting and foraging opportunities for various S41 bird species and foraging opportunities for local bats.
  - Despite the low conservation value, the permanent loss of the South Killingholme Drain through the Site and diversion to the south with partial culverting. It should be noted that the loss of this Drain along Rosper Road would have negligible effects.
- 6.9.20 The effects for the operational phase (Table 13.5 of Chapter 13) are assessed as being negligible (non-significant), with the exception of NOx emissions on the Humber Estuary (SAC/SPA/Ramsar site) which are assessed as being minor adverse (non-significant).

- 6.9.21 ES Chapter 13 considers the cumulative effects of the Proposed Development and the proposed VPI CCP during construction and operation, of which most are considered to be negligible (non-significant). This is with the exception of cumulative air quality impacts during operation which are considered to be 'minor adverse' (non-significant).
- 6.9.22 Cumulative effects of the Proposed Development and planned developments are considered separately in Chapter 18 and are detailed later in this Report.
- 6.9.23 A Biodiversity Net Gain (BNG) Report and Strategy has been prepared to support the Proposed Development. As there is insufficient opportunity to meet the 10% BNG commitment on land within the Site, an 'off-site' solution is required. Options for off-site solutions are being explored with a range of stakeholders with the assumption that the beneficial outcomes would be delivered within the construction phase. Whilst the precise solutions are still being finalised, there is confidence that the BNG solution will fully mitigate any and all adverse effects identified in the Ecological Impact Assessment (EclA). This would be delivered through a Biodiversity Enhancement and Management Plan (BEMP) which would be agreed with Council prior to the commencement of work. This Applicant is willing to secure this by a suitably worded planning condition.
- 6.9.24 With embedded mitigation measures in place and the implementation of measures to achieve 10% BNG, it is anticipated that the residual effects during construction would be 'moderate beneficial' (non-significant). With embedded mitigation measures in place it is anticipated that there would be no residual effects anticipated during the operational phase of the Proposed Development.

## 6.10 Geology, Hydrology and Contaminated Land

- 6.10.1 The European Union (EU) Directives and United Kingdom (UK) Acts outline the obligation for geology, hydrogeology and land contamination assessment, including risks to human health and the environment from ground conditions, are summarised as follows.
- 6.10.2 The NPPF references the responsibility of developers and/or landowners for safe development in paragraph 184. Paragraph 185 of the NPPF refers to minimising the effects of pollution and adverse impacts from the proposed development.
- 6.10.3 Although the Proposed Development and the Humber Zero Project is not an NSIP, National Policy Statement EN-1 still provides useful and relevant guidance.
- 6.10.4 The relevant policies from the North Lincolnshire Local Plan (2003) include RD1 (Development involving High Quality Land), DS1 (Requirements), DS7 (Contaminated Land), DS9 (Development of Land in the Vicinity of Established Hazardous Installations and Pipelines), DS10 (New Hazardous Installations and Pipelines), DS11 (Polluting Activities), DS13 (Groundwater Protection and Land Drainage), DS14 (Foul Sewage and Surface Water Drainage), and DS15 (Water Resources).
- 6.10.5 ES Chapters 10 assesses the impact of the Proposed Development in terms of geology, hydrology and contamination during construction, operation and decommissioning phases. A ground investigation was undertaken (between 5 and 12 September 2022) and four ground gas

monitoring visits (between 30 September to 31 October 2022) at the Site by a third party (Geotechnics Limited).

- 6.10.6 Natural England (2019) reports the Agricultural Land Use Classification (ALC) for the majority of the VPI Site is designated as Grade 3. The north-west area of the VPI Site, where the existing VPI Immingham CHP Plant is located, the ALC is designated as Grade Urban. The ALC divides land into Grades 1 to Grades 5, with Grade 3 separated into 3a and 3b. Grades 1-3a are described as the “Best and Most Versatile land” (Natural England, 2012). Natural England guidance (2012; 2021) states that Natural England should be consulted if the loss is likely to be 20 ha or more. However, as the area of Grade 3 within the VPI Site is less than 20 ha, an ALC survey is not considered to be necessary.
- 6.10.7 The groundwater vulnerability for the Site varies between low and high. The Principal Aquifer in the centre of the southern half of the Site is designated as low vulnerability due to the combination of a productive bedrock aquifer and unproductive superficial aquifer. Areas of the site that are not overlain by Tidal Flat Deposits (Clay and Silt) have a groundwater vulnerability of medium to high due to the combination of a productive bedrock aquifer and a productive superficial aquifer.
- 6.10.8 The surface water flooding risk for the Site identified in the Envirocheck Report (285387654\_1\_1) (2021) indicates there is a Low Risk (1000-year return period) to a High Risk (30-year return period), particularly across the undeveloped area of the VPI Site. The Environment Agency’s flood map for planning indicates that the VPI Site is within Flood Zone 3. These are areas assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The flood zone does not take into account the presence of flood defences in the area.
- 6.10.9 During the construction phase, surface water runoff will be controlled using appropriate drainage measures and segregating uncontaminated surface water from any potentially polluted waters, as well as impermeable surfacing to minimise infiltration into the ground where necessary. This will minimise the likelihood for potential contaminants to migrate to controlled waters. If piled foundations are proposed for the Proposed Development, piling risk assessments will be undertaken in accordance with Environment Agency guidance. These will be used to establish the means of mitigating any risks of causing new pollutant linkages and/ or worsening existing ones with respect to risks to controlled waters at the construction stage of the Proposed Development.
- 6.10.10 The ground investigations will be used to determine the suitable founding material which will be required across Site. Any residual risks relating to soft ground will be addressed during the detailed design stage, taking into account the ground investigation results. The specification design will be determined using data from proposed ground investigation and chemical analysis of soil samples analysing the BRE Sulphate suite.
- 6.10.11 The risks to human health receptors from accidental leaks of fuels and oils from mechanical plant and/or potentially contaminated dust during excavation works is considered to be ‘moderate adverse’ (significant). There are no offices or occupied buildings proposed on the Site, therefore ground gas mitigation measures have not been considered further.

- 6.10.12 During the operational phase, there is potential for environmental risks associated with spillages due to road accidents or faulty vehicles. To manage potential impacts on controlled waters during the operational stage of the Proposed Development, suitable drainage systems (including interceptors) will be employed during construction and maintained during operation to prevent infiltration of surface water or potential contaminants into the ground, surface water drainage systems and water bodies during the operational phase.
- 6.10.13 At the decommissioning phase, mitigation measures similar to those employed for the construction phase of the Proposed Development will be implemented to minimise the risk of any contaminated surface water runoff from the Site during the decommissioning phase so that it does not have a detrimental effect on the receiving watercourse and the underlying aquifers. The surface water runoff will be controlled using appropriate drainage measures and segregating uncontaminated surface water from any process effluent streams, as well as impermeable surfacing to minimise infiltration into the ground.
- 6.10.14 The ES concludes that approximately 15ha of Grade 3 agricultural land would be lost from the previously undeveloped land within the Site resulting in a moderate adverse (significant) effect on agricultural soil. This assumes the worst-case scenario that the land is classified as Agricultural Land Classification Grade 3a ('Best and Most Versatile' agricultural land).
- 6.10.15 The potential effect, after mitigation measures are applied, is considered to be minor adverse (not significant) for human health, development infrastructure and controlled waters receptors in the construction phase. Mitigation measures include carrying out constructions works in line with the CEMP, designing buildings and services using concrete and service pipes appropriate for any aggressive ground conditions and implementing ground gas protection measures into design and building of structures. The potential effect for agricultural soils at the Site is considered to be moderate adverse (significant).
- 6.10.16 The potential effect, after mitigation measures are applied to human health is considered to be negligible (not significant) for the direct contact with contamination and inhalation of dust and/or soil derived vapours pathway during the operational phase. The potential effect, after mitigation measures are applied, to controlled waters is considered to be negligible (not significant) during the operational phase. The assessment for development infrastructure receptors indicates the potential effect is minor adverse (not significant) for migration of ground gas and direct contact pathways. The potential effect (after mitigation measures are applied) to human health associated with migration of ground gas during the operational phase is considered to be minor adverse (not significant).
- 6.10.17 The potential effects (after mitigation measures are applied) during the decommissioning phase for human health, and development infrastructure is considered to be minor adverse (not significant). The potential effects to controlled waters is considered to be negligible (not significant) following the implementation of mitigation measures.
- 6.10.18 While the residual effects on the loss of agricultural soils would moderate adverse (significant), a Soil Management Plan would be implemented to identify the different soil types and the most appropriate re-use for the different types of soil and how they should be handled, stored and replaced. Furthermore, despite its agricultural land classification, the configuration (triangular and

atypical) and its location directly abutted by the existing VPI CHP Plant, the Network Rail Line and various roadways (e.g. Rosper Road) are considered to constrain its potential agricultural use of the land.

- 6.10.19 Therefore, the potential impacts associated with the Humber Zero project from a geology, hydrogeology and land contamination Strategy which would confirm perspective are considered to be not significant for the construction, operation and decommissioning phases. This is with the exception of the loss of agricultural soil which would be subject to the mitigation measures identified above.
- 6.10.20 As such, the Proposed Development would accord with national and local policies relating geology, hydrology and contamination.

## **6.11 Waste Management and Minerals**

- 6.11.1 Minimising waste and using natural resources prudently are important parts of the NPPF's environmental objective. Policy SHBE-1 of the HELA requires development to implement waste control measures (where practical) and use materials sensitive to the location. Emerging Policy WAS6 encourages efficient resource use and, and sustainable waste management practices embedded throughout the lifecycle of a development from design, construction, and operation.
- 6.11.2 ES Chapters 4 and 15 identify and/or assess the impact of the Proposed Development in terms of materials and wastes during the construction (construction dust), operation (process emissions) and decommissioning phases.
- 6.11.3 There are no allocated mineral sites or Mineral Safeguarding Areas (MSAs), nor allocated or safeguarded waste sites within the Site. As such, the Proposed Development would not result in any adverse impacts or conflict with local and national policy in terms of mineral and waste allocations.
- 6.11.4 The materials used and wastes generated during construction are not anticipated to generate significant effects on any receptors, with the weight of each construction material to be used being below national baseline consumption levels (i.e. no individual construction material is equal to or greater than 1% by weight of baseline consumption). This includes construction site operations waste streams from workers facilities. In accordance with the principles of emerging Policy WAS6, it is not anticipated that demolition or excavation will require a large quantity of construction material use, with any demolition waste likely to have a high potential recovery rate. The design of the Proposed Development has considered design principles to minimise cut and fill, thereby minimising the import and export of materials and waste.
- 6.11.5 The ES Chapter 15 details the expected operational wastes streams associated with the Proposed Development, their source, classification, and estimated quantity. The operation wastes generated would mainly arise from the Proposed PCC Plant, and to a lesser extent from site offices. The operational wastes from the Proposed PCC would include solid wastes that may be hazardous, some of which would be suitable for landfill disposal, high temperature incineration, or managed by hazardous liquid waste facilities liquid wastes, as appropriate and detailed in the ES.



- 6.11.6 The ES concludes that the anticipated materials used for, and wastes generated by the Proposed Development would not result in significant effects ('slight adverse' [not significant]) on any receptors, and as such there are no mitigation and enhancement measures proposed, nor any residual effects.
- 6.11.7 Notwithstanding, an Outline Construction Environmental Management Plan (CEMP) has been submitted with this planning application and a detailed CEMP would be secured by way of planning condition to minimise potential impacts on the environment and include best practice mitigation during the construction of the Proposed Development.
- 6.11.8 A Site Waste Management Plan (SWMP) will be developed as part of the CEMP to control and manage all wastes arising from the construction activities to minimise, as far as reasonably practicable, impacts on the environment. The SWMP will specify the waste streams to be estimated and monitored and will set goals with regards to the waste produced.
- 6.11.9 As such, the Proposed Development would accord with national and local policies relating to waste management and mineral use.

## **6.12 Climate Change and Carbon**

- 6.12.1 The Proposed Development is strongly supported by policies CS1, CS2, CS5 and CS18 of the Core Strategy (2011) which aim to contribute Councils own climate goals as well the UK Government's commitment to meeting the legally binding target of 'net zero' carbon emissions by 2050.
- 6.12.2 The revised National Planning Policy Framework (NPPF) sets out the Government's planning policies for England. Policies of relevance to climate change include those meeting the challenge of moving to a low carbon economy, climate change, flooding and coastal change. The NPPF states that the planning system should support this transition by supporting low carbon energy and associated infrastructure.
- 6.12.3 The National Planning Practice Guidance (NPPG) for Climate Change advises on how to identify and implement suitable mitigation and adaptation measures in the planning process. The guidance states that "effective spatial planning is an important part of a successful response to climate change as it can influence the emission of greenhouse gases. Planning can also help increase resilience to climate change impact through the location, mix and design of development" (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (DLUHC), 2014).
- 6.12.4 It is noted that the Proposed Development is not an NSIP, however, Draft Overarching National Policy Statement for Energy (EN-1) and (EN-2) are of relevance and support the decarbonisation of current infrastructure.
- 6.12.5 The Proposed Development is also strongly supported by a variety of UK Climate Change Government Strategy and Policy including 'Net Zero Strategy: Build Back Greener', 'Net Zero - Opportunities for the Power Sector' and the 'Clean Growth Strategy.' Additional UK Climate Policy and their support for the Proposed Development are discussed in Section 4.0.
- 6.12.6 Chapter 14 of the ES assess the potential effects of the construction and operation (including maintenance) of the Proposed Development at VPI Immingham's Combined Heat and Power

(CHP) Plant in terms of climate change and sustainability. The Proposed Development will be designed to be capable of capturing 95% of carbon emissions during steady state operation. It is intended that the CO<sub>2</sub> will be exported at high pressure via an interface to a CO<sub>2</sub> transportation network adjacent to the Site.

- 6.12.7 Chapter 14 of the ES undertakes a Greenhouse Gas (GHG) assessment for the Proposed Development that estimates the amount of carbon emissions produced during construction and operation and uses this to understand to what extent the Proposed Development will contribute towards the UK achieving a science-based 1.5 C aligned transition towards net zero. This is calculated in line with the GHG Protocol.
- 6.12.8 The assessment concludes that the Proposed Development achieves emission mitigation that are fully in line to achieve UK's trajectory towards net zero and can be assessed as having a beneficial effect that is significant in terms of GHG emissions.
- 6.12.9 For the Proposed Development, embodied carbon in construction materials accounts for the highest proportion of overall GHG construction emissions with 48%, followed by transportation of construction materials representing 34% and on-site construction activities representing 13%.
- 6.12.10 Aspects of construction GHG emissions will be managed through the Construction Environmental Management Plans (CEMPs) and related plans including the Site Waste Management Plans (SWMPs). An Outline CEMP is provided in Appendix 4A (Volume II of this ES) and a detailed CEMP would be secured by planning condition and developed by the appointed contractors at a later stage to measure, monitor and report energy and water consumption and GHG emissions during construction of each Proposed Development.
- 6.12.11 When fully installed and operational, the Proposed VPI Development would capture 95% of the flue gases directly emitted from the CHP plant at the VPI site. When factoring in other emission sources identified at the Proposed VPI Development such as waste, maintenance etc, the direct carbon capture rate, relative to baseline conditions, is estimated to be 95%. The overall outputs of VPI remain unchanged after the construction of the PCC plant therefore the carbon capture rate % remains unchanged. The overall carbon capture rate is reduced to 82% when upstream emissions from the wider value chain are taken into account. These are associated with the extraction, refining and transportation of the natural gas over which VPI have less control<sup>1</sup>.
- 6.12.12 As such, the Proposed Development would accord with national and local policies.

## 6.13 Major Accidents and Disasters

- 6.13.1 Both national and local policy states that planning permission will only be granted for potentially hazardous installations and operations where it can be demonstrated that it would not impose significant restrictions and risk to surrounding land uses. This includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security. Further to this, the focus of national and local planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than

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<sup>1</sup> This does not include emissions from the combustion refinery products by end users

the control of processes or emissions, and planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.

6.13.2 Chapter 16 of the ES provides a summary of the assessment of the major accidents and disasters (defined in Chapter 16) that have the potential to arise during construction, operation and decommissioning of the Proposed Development, and any required mitigation. It acknowledges that these hazards and threats would be covered by regulatory regimes such as the Control of Major Accidents and Hazards (COMAH) Regulations and Environmental Permitting Regulations. The major accidents and disasters considered include: fire and explosion, risk of harmful gas release, extreme weather events (such as extreme flooding), spillage or leakage of chemicals or hazardous substances into ground water and/or surface water, vandalism or terrorism, ground excavation or collapse, rail and major road traffic accidents, aircraft/drone impact, pandemic, domino effects from on-site facilities and/or neighbouring facilities, and utility strikes/failures.

6.13.3 The design of the Proposed Development would include a range of mitigation measures to address major accidents and disasters, including:

- incorporation of 'safety in design principles' following the hierarchy of 'eliminate', 'control' and 'protect' (e.g. personal protective equipment);
- implementation of Health and Safety Plans and appointment of competent contractors under the CDM Regulations;
- Major Accident Prevention Plans to inform the COMAH Licence for operational facilities (if required);
- siting and design of high-pressure CO<sub>2</sub> equipment, including with regard to areas of potential exposure and prevailing wind directions;
- design of security measures to prevent trespassers;
- surface water management systems to attenuate up to and including a 1 in 100 year storm event with an allowance for climate change; and
- acquiring the appropriate permissions for operation, including COMAH Licence (if required) and Environmental Permits, and operating in accordance with these.

6.13.4 During the construction phase, a range of mitigation measures would be employed including:

- the appointment of suitably experienced contractors;
- preparation and implementation of risk assessments, working method statements, operating procedures, and personnel training to reduce occurrence;
- preparation and implementation of a detailed CEMP in accordance with relevant legislation and environmental permits. This would include measures aimed at reducing flood risk during construction, particularly in Flood Zone 3 such as locating topsoil and construction materials outside the 1 in 100 year floodplain extent, maintaining connectivity between the floodplain

and River Humber and maintaining existing ground levels, and use of the Flood line Warnings Direct Service for notification of potential floods;

- preparation and implementation of a CTMP to reduce occurrence of road-related accidents; and
- installation site security and lighting (to be used during hours of darkness) would be installed and operation 24 hours a day 7 days a week. This would include the provision of fencing and security arrangements which would be monitored on-Site, including CCTV and controlled personnel / emergency accesses.

6.13.5 During the operational phase, a range of mitigation measures for the Proposed Development would be employed including:

- obtaining a lower tier COMAH Licence as a minimum is assumed, pending finalisation of the hazardous substances that would be handled on-site and the inventories involved;
- design and operational controls to manage risks associated with hazardous substances, including on-site storage of liquid chemicals in bunded controlled areas with appropriate storage capacity and segregation of incompatible materials;

6.13.6 Design and impact avoidance measures implemented during the decommissioning phase would be the same as those for the construction phase.

6.13.7 The ES concludes that the embedded mitigation measures identified (as detailed above) incorporate the appropriate standards, proven design methods and control measures necessary to control the identified risks as 'tolerable if as reasonably low as possible', and therefore all potential major accidents and disasters identified during construction, operation and decommissioning are classified as being 'not significant' and have no potential significant residual effects.

## 6.14 Socio-economics and Human Health

6.14.1 The presumption in favour of sustainable development, including economic outcomes, is an important part of national and local policy. Development that contributes to a competitive business and industrial sector and sustainable local communities is encouraged in Policies CS2 of the Core Strategy and PS1 of the HELA Development Plan. Policy CS12 of the Core Strategy also encourages the development of the Humber area economy and utilising the local workforce from nearby towns.

6.14.2 Chapter 17 of the ES identifies and assesses the socio-economic impacts during the construction, operation and decommissioning phases of the Proposed Development.

6.14.3 The Proposed Development would contribute net gain of full-time employment (FTE) during construction (short term) and operation (long term). These jobs include direct, indirect and induced employment as a result of the Proposed Development and would benefit people from mostly within the local catchment, particularly in long-term operational employment.

6.14.4 This includes an average of 349 construction jobs over the 4 year construction period, with a peak number of construction staff of 843. There are likely to be similar outcomes for the

decommissioning phase as with the construction phase. These effects are considered to be beneficial (significant) in the short term.

- 6.14.5 In the operational phase, it is anticipated that there would be a total net (gain) employment 48 FTE jobs generated by the Proposed Development, of which 43 are expected to be from within the local catchment. These effects are considered to be beneficial (not significant) in the long term. This is in addition to the existing CHP jobs which would continue to be safeguarded.
- 6.14.6 The effects on Human Health during construction, operation and decommissioning Chapters 6, 7, 8 and 17 of the ES, and has been addressed in the previous sections covering amenity in this Statement, including 'Air Quality', 'Noise and Vibration' and 'Traffic and Transport'. Overall, the ES concludes that the embedded mitigation measures will ensure the impacts on the health and wellbeing of the local population, construction workers and operational staff are not significant.
- 6.14.7 The ES concludes that the Proposed Development would have a moderate beneficial (significant) effect on the local economy. The Proposed Development is therefore considered to be consistent with national and local policy regarding sustainable economic development and enhancing the local economy and employment of the Humber area.

## 6.15 Cumulative and Combined Effects

- 6.15.1 The requirement for cumulative and combined effects assessments is stated in the EIA Regulations, at Schedule 4 Part 5 of the EIA Regulations which requires: "A description of the likely significant effects of the development on the environment resulting from, inter alia [...] (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources".
- 6.15.2 ES Chapter 18 considers the residual cumulative and combined effects of the Proposed Development during construction, operation and decommissioning, taking into consideration the mitigation measures set out in the ES Chapters 6 to 17. The cumulative effects considered the potential for cumulative effects with other plans and projects within the surrounding area.
- 6.15.3 The combined effects are the effects of more than one type of impact from the Proposed Development on a single receptor.

### Cumulative Effects

- 6.15.4 The significant effects identified are cultural heritage and socio-economics impacts arising from the Proposed Development and other planned developments.
- 6.15.5 The ES concludes that any significant socio-economic impacts is 'moderate beneficial (significant)' impacts due to construction employment generation from various developments.
- 6.15.6 The significant effects on cultural heritage arise from the Proposed Development and planned developments of Viking CCS Pipeline (undecided) and on Land adjacent to the Westgate Entrance of Port Immingham (PA/2022/1223, undecided), which are considered to be 'major adverse (significant)' on assets associated with the remains of a Bronze Age Settlement Site. This will be mitigated by the archaeological evaluation for the Proposed Development and the other two planned development.

## Combined Effects

- 6.15.7 No combined effects were identified that would be any greater than the individual effects assessed in each technical assessment.

## 6.16 Summary

- 6.16.1 As with all development proposals, it is necessary to assess the Proposed Development in terms of its conformity and compliance with relevant planning policy and weigh its benefits and any significant adverse environmental effects against each other (the 'planning balance').
- 6.16.2 Section 6 of this Planning Statement has assessed the Proposed Development's conformity with the relevant local and national planning policy. The Applicant's assessment has not identified any conflicts with the statutory (local) development plan or the NPPF.
- 6.16.3 This section of the Planning Statement demonstrates that significant adverse residual effects will arise in terms of the loss of agricultural soils, visual impacts on residential and recreational receptors at one viewpoint (Marsh Lane) and cumulative impacts with other planned developments on archaeological assets.
- 6.16.4 Loss of agricultural soil would arise from the previously undeveloped land within the Site. This assumes the worst case scenario that the land is classified as Agricultural Land Classification Grade 3a ('Best and Most Versatile' agricultural land). The effect on the loss of agricultural soils would be mitigated by the implementation of a Soil Management Strategy which would confirm the different soil types and the most appropriate re-use for the different types of soil and how they should be handled, stored and replaced. In addition, despite its agricultural land classification, the configuration (triangular and atypical) and its location directly abutted by the existing VPI CHP Plant, the Network Rail Line and various roadways (e.g. Rosper Road) are considered to constrain its potential agricultural use of the land.
- 6.16.5 Whilst the visual impacts at one location would be long-term, it is considered that the Proposed Development would be congruous with its context and that these effects would be limited to the localised landscape immediately adjacent to the Site with low potential for the surrounding landscape character to be adversely affected.
- 6.16.6 The cumulative impacts on archaeological assets will be mitigated by the archaeological evaluation for the Proposed Development and the other two planned development.
- 6.16.7 Despite the above, the Proposed Development, will have a number of very clear and substantial benefits, including significant beneficial effects for the capture of GHG emissions during operation, employment generated during the construction and decommissioning phases and contribution to creation of new habitat under the BNG Strategy.
- 6.16.8 As such, the adverse effects are outweighed by the very substantial benefits of the Proposed Development. In the absence of material considerations to the contrary, planning permission should therefore be granted without delay.

## 7.0 CONCLUSIONS

7.1.1 The following conclusions can be drawn from this Planning Statement:

- In order to achieve net zero greenhouse gases by 2050, the UK's existing industry sector needs to be decarbonised. Energy intensive industries account for more than 20% of the economy and 1 in 10 jobs in the Humber.
- The Proposed Development forms part of the Humber Zero large-scale decarbonisation programme, being advanced in collaboration with the Applicant and Phillips 66 Limited, that aims to remove up to 8 million tonnes (MT) of atmospheric CO<sub>2</sub> emissions per annum from the Immingham industrial cluster by 2030 through the deployment of a number of technologies such as Carbon Capture, Utilisation and Storage (CCUS).
- By removing 95% of CO<sub>2</sub> emissions from one of the large industrial processes in the Humber cluster – the VPI Immingham CHP Plant gas turbines 1 and 2 and two auxiliary boilers – the Proposed Development will have a significant contribution in reducing the overall emissions from the Industrial Humber Cluster. The construction of the Proposed Development could (subject to the necessary consents being granted and government policy/ funding support being in place to enable an investment decision being made) start in Quarter 3 of 2024 for the VPI Development.
- The Proposed Development will make a significant contribution toward the Humber area economy through the generation of a large number of construction jobs.
- The layout and design of the Proposed Development has necessarily been dictated by the processes involved and technical and safety considerations, however, it makes effective use of the Site and is considered appropriate given the industrialised context, characterised by energy intensive industry, within which it will sit.
- The Proposed Development involves land that is identified as a Strategic Employment Site development within a regionally important economic area. The Site is not subject to any nature conservation, heritage, landscape or other designations. Whilst it is located near the Humber Estuary (SSSI, SPA, SAC and Ramsar site) and is an area of high risk of flooding, the ES concludes that with the implementation of standard mitigation measures there would be no significant adverse residual risks in terms of biodiversity and ecology and flood risk and drainage. Further to this, the Proposed Development will create habitat to achieve biodiversity net gain resulting in a significant beneficial effect for Open Mosaic Habitat, grassland / scrub habitat and small heath butterfly.
- The Site is therefore considered to represent an appropriate location for the Proposed Development.
- EIA undertaken for the Proposed Development, the findings of which are reported in the ES, identified significant adverse environmental effects in relation to agricultural soils, visual

impacts to residents and PROW users at one location, and cumulative impacts with other planned developments on archaeological assets. As detailed previously in this report, the effects on the loss of agricultural soil have considered the worst case scenario and would affect a small and constrained parcel of land that would not likely be ideal for agricultural use. The visual effects would be localised and are considered to be congruous with the highly industrialised context. In terms of archaeological assets, the cumulative effects will be suitably mitigated through a programme of archaeological evaluation agreed with North Lincolnshire Council for the Proposed Development and the other planned developments. Furthermore, the ES concludes that there would be a number of substantial and significant beneficial effects arising from the Proposed Development in terms of the employment generated during construction and decommissioning, the capture of greenhouse gas emissions during the operation, and creation of new habitat. In light of this, it is considered that those limited effects are outweighed by the very substantial and significant benefits.

- 7.1.2 Section 70(2) of the TCPA states that in dealing with an application for planning permission, the LPA shall have regard to the provisions of the development plan, as far as it is material to the application, and any “other material considerations”. The NPPF is a material consideration in the determination of applications for planning permission.
- 7.1.3 The assessment of the Proposed Development against relevant local and national planning policy has taken account of the findings of the EIA undertaken. The assessment has not identified any conflict with local development plan policy and it is considered that the Proposed Development also complies with the relevant policies of the NPPF.
- 7.1.4 The NPPF contains a presumption in favour of sustainable development and paragraph 11 of the NPPF states that LPAs should approve proposals for such development where they accord with an up-to-date development plan. The Proposed Development clearly represents sustainable development and has there is no conflict with the policies of the local development plan planning permission should therefore be granted without delay.