

VPI Immingham OCGT

Proposed 299MW Open Cycle Gas Turbine ('OCGT') Power Station

Environmental Impact Assessment Scoping Report

June 2018



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GLOSSARY

Abbreviation	Description
ADMS	Atmospheric Dispersion Modelling System
AONB	Area of Outstanding Natural Beauty
APFP	Applications: Prescribed Forms and Procedures
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BIS	Department for Business, Innovation and Skills (now closed)
BS	British Standard
CAA	Civil Aviation Authority
CCR	Carbon Capture Readiness
CCS	Carbon Capture and Storage
CCGT	Combined Cycle Gas Turbine
CDM	Construction (Design and Management) Regulations 2015
CEMP	Construction Environmental Management Plan
CHP	Combined Heat and Power
CIEEM	Chartered Institute for Ecology and Environmental Management
Cifa	Chartered Institute for Archaeologists
CMS	Construction Method Statement
COPA	Control of Pollution Act 1974
CRTN	Calculation of Road Traffic Noise
DCLG	Department of Communities and Local Government
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
DMRB	Design Manual for Roads and Bridges
DTM	Digital Terrain Model
EH	English Heritage
EIA	Environmental Impact Assessment
EMR	Electricity Market Reform
EPUK	Environmental Protection UK
ES	Environmental Statement
ESA	Environmental Site Assessment
FGD	Flue Gas Desulphurisation
FRA	Flood Risk Assessment
GCN	Great Crested Newts
HA	Highways Agency
HCA	Homes and Communities Agency
HE	Historic England

Abbreviation	Description
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HHRA	Human Health Risk Assessment
IAQM	Institute of Air Quality Management
IDB	Internal Drainage Board
IED	Industrial Emissions Directive
IEEM	Institute of Ecology and Environmental Management
IEMA	Institute of Environmental Management and Assessment
JNCC	Joint Nature Conservation Committee
LCA	Landscape Character Assessment
LLFA	Lead Local Flood Authority
LOR	Lindsey Oil Refinery
LSE	Likely Significant Effects
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
MW	Megawatts
NAQS	National Air Quality Strategy
NCA	National Landscape Character Area
NG	National Grid
NLC	North Lincolnshire Council
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
OCGT	Open Cycle Gas Turbine
OMH	Open Mosaic Habitats on Previously Developed Land
ONS	Office for National Statistics
PEI	Preliminary Environmental Information
PINS	Planning Inspectorate
PRoW	Public Rights of Way
RCA	Regional Character Area
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SM	Scheduled Monument
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage Systems
TA	Transport Assessment
TCPA	Town and Country Planning Act
WFD	Water Framework Directive
WHO	World Health Organisation
ZTV	Zone of Theoretical Visibility

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 AECOM Infrastructure and Environment Ltd ('AECOM') has been commissioned by VPI-Immingham B Ltd (hereafter referred to as 'the Applicant') to prepare this Environmental Impact Assessment (EIA) Scoping Report to inform the scope and content of an EIA for a proposed Open Cycle Gas Turbine (OCGT) Power Station on land to the north of the existing VPI Immingham Power Station Combined Heat and Power (CHP) plant, Rosper Road, South Killingholme, Immingham, DN40 3DZ (hereafter referred to as the 'Proposed Development' or 'VPI Immingham OCGT power station')) (see Figure 1).
- 1.1.2 The Proposed Development would provide a gross electrical output of up to 299 megawatts (MW) of electrical generation capacity for export onto the UK national transmission system.
- 1.1.3 The Proposed Development will export electricity to the National Grid by way of the existing sub-station on the existing Combined Heat and Power (VPI CHP) plant to the immediate south of the main power station part of the Proposed Development. See Section 2 below for further descriptions of the parcels of land making up the Proposed Development.
- 1.1.4 This Scoping Report considers the environmental context of the Proposed Development site and the potential environmental impacts of the Proposed Development. Where impacts are considered to have the potential to cause significant environmental effects, these are identified and the proposed approach to be used to characterise the impacts and understand the significance of their effects is outlined. This report also outlines issues perceived to be non-significant which it is proposed do not require formal assessment as part of the EIA.
- 1.1.5 The EIA is an iterative process that feeds into the engineering design process to mitigate significant environmental effects where they are predicted to occur. The final design iteration, along with the findings of the EIA will be reported in an Environmental Statement (ES), in accordance with The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('EIA Regulations') and will be submitted with the Development Consent Order (DCO) Application in accordance with Regulation 5 (2)(a) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) ('APFP Regulations').

1.2 Consenting Regime

- 1.2.1 The Proposed Development falls within the definition of a 'nationally significant infrastructure project' (NSIP) under Section 14(1)(a) and 15(2) of the Planning Act 2008 as a 'generating station exceeding 50 MW'. It is also a 'Schedule 2' development under Part 3(a) of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) ('EIA Regulations') as it constitutes 'Industrial installations for the production of electricity, steam and hot water'. Whilst EIA is not compulsory for Schedule 2 developments, given the character and scale of the Proposed Development, it is considered that there is the potential for the Proposed Development to have significant effects on the environment, and therefore that the application for the Proposed Development would benefit from an EIA.
- 1.2.2 As a NSIP project, the Applicant is required to seek a DCO to construct and operate the power station, under Section 31 of the Planning Act 2008. The DCO application will be prepared in

accordance with Section 37 of this Act and secondary legislation including the EIA Regulations and the APFP Regulations (detailed above). The DCO application will be submitted to the Planning Inspectorate (PINS) who will examine the application and make recommendations to the Secretary of State, who will subsequently determine whether or not a DCO should be granted for the Proposed Development.

- 1.2.3 Figure 2 illustrates the proposed site boundary, which comprises the proposed generating station and associated infrastructure including gas and electricity connections. It also incorporates an existing gas pipeline to the National Grid (NG) gas network. Further detail on the proposed site boundary and the areas it incorporates is provided in Section 2.1 below.
- 1.2.4 A description of the site and Proposed Development is presented in Sections 2 and 3 of this report.

1.3 Objectives of Scoping

- 1.3.1 Having determined that an EIA would be carried out for the Proposed Development ("screening"), scoping is the next key stage of the EIA process. Scoping provides a framework for identifying likely significant environmental impacts arising from the Proposed Development and distinguishing the priority issues to be addressed within the ES. Scoping also allows stakeholders an early opportunity to comment on the proposed structure, methodology and content of the EIA.
- 1.3.2 This Scoping Report has been prepared as part of a request to PINS for a formal Scoping Opinion on the information to be provided in the ES, pursuant to Regulation 10 of the EIA Regulations.
- 1.3.3 Table 1 below presents a list of information that should be included in a Scoping Report, as prescribed by Regulation 10 of the EIA Regulation and as highlighted in PINS Advice Note 7 'Environmental Impact Assessment: Screening, Scoping and Preliminary Environmental Information' (Ref 1-1) and the location in this report where the information is presented.

Table 1. Information provided in the Scoping Report (based on Advice Note 7)

Description of Information Required	Section in Scoping Report where the Information is Presented
A plan showing: <ul style="list-style-type: none"> • The DCO site boundary and associated development; • Permanent land take required for the NSIP; • Temporary land take required for construction, including construction compounds; • Existing infrastructure which would be retained or upgraded for use as part of the NSIP; • Existing infrastructure which would be removed; and • Features including planning constraints and designated areas on and around the site, such as national parks or historic landscapes. 	Figures 1-4
Information including: <ul style="list-style-type: none"> • A description of the Proposed Development, including its location 	Section 2 (Description of the Existing Environment)

Description of Information Required	Section in Scoping Report where the Information is Presented
<p>and technical capacity;</p> <ul style="list-style-type: none"> • An explanation of the likely significant effects of the development on the environment; and • Such other information or representations as the person making the request may wish to provide or make. 	<p>Section 3 (Project Description)</p> <p>Section 6 (Potentially Significant Environmental Issues)</p>
<p>An explanation and outline of:</p> <ul style="list-style-type: none"> • The approach to addressing uncertainty where it remains in relation to elements of the Proposed Development e.g. design parameters; and • The main alternatives considered and the reasons for selecting a preferred option. 	<p>Section 3 (Project Description)</p> <p>Section 4 (Project Alternatives)</p>
<ul style="list-style-type: none"> • A summary table depicting each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues; and • A detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided. 	<p>Section 7: Non-Significant EIA issues</p>
<p>Results of desktop and baseline studies where available.</p>	<p>Section 6 (Baseline Conditions for each environmental topic)</p>
<p>Guidance and best practice to be relied upon, and whether this has been agreed with the relevant bodies.</p>	<p>Section 6 (Scope of the Assessment for each environmental topic)</p>
<p>Methods used or proposed to be used to predict impacts and the significance criteria framework used.</p>	<p>Section 6 (Scope of the Assessment for each environmental topic) and Section 8 (EIA Process)</p>
<p>Any mitigation proposed and predicted residual impacts.</p>	<p>Section 6 (Scope of the Assessment for each environmental topic)</p>
<p>Where consequential or cumulative development has been identified, how the developer intends to assess these impacts in the ES.</p>	<p>Section 6.12 (Cumulative and in-combination effects)</p> <p>Section 8 (EIA Process)</p>
<p>An indication of any European designated nature conservation sites that are likely to be significantly affected by the proposed development and the nature of the likely significant impacts on these sites.</p>	<p>Section 2 (Description of Existing Environment);</p>
<p>Key topics covered as part of the developer’s scoping exercise.</p>	<p>Sections 6 (Potentially Significant Environmental Issues) and 7 (Non-Significant Issues)</p>
<p>An outline of the structure of the proposed ES.</p>	<p>Section 8 (EIA Process)</p>

2.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

2.1 The Proposed Development Site

2.1.1 The Proposed Development Site (termed the 'Site') is located in the vicinity of the existing VPI CHP plant and east of the Lindsey Oil Refinery in North Killingholme, Lincolnshire. Immingham Dock is located approximately 1.5km to the south east at its closest point. The Humber ports facility is located approximately 500m north at its closest point and the Humber Refinery is located approximately 500m to the south. The nearest conurbation is the town of Immingham and is located approximately 1.8km southeast of the Site and the nearest residential property is a single property on Marsh Lane located approximately 325m to the east of the Site. The villages of South and North Killingholme, located approximately 1.4km and 1.6km from the Site respectively. The Site location is shown on Figure 1.

2.1.2 The Site is located almost entirely within the boundary of the administrative area of North Lincolnshire Council (a unitary authority). A small part of the existing gas pipeline (described below) lies within the administrative area of Lincolnshire County Council and North East Lincolnshire District Council. The Site red line boundary encompassing all aspects of the Proposed Development is shown in Figure 2.

2.1.3 The Site comprises a number of areas adjacent to and within the existing VPI CHP site:

- Main OCGT Power Station Site: An undeveloped parcel of land of approximately 2.0 ha lying between the existing VPI CHP plant to the south, and Rosper Road to the east. Immediately to the north of the Site are a private car park and a number of single storey structures associated with access to the Lindsey Oil Refinery. This is owned and operated by Total, as is the Oil Refinery;
- New Gas Pipeline Route(s): An area of land to be used for the installation of a new gas pipeline from the existing gas supply to the existing CHP plant to fuel the Proposed Development. Two routes are currently under investigation, both of which are approximately 300m in length:
 - One route comprising an undeveloped parcel of land running around the existing CHP site to the west from the main OCGT Power Station Site to a proposed Above Ground Installation (AGI) site located adjacent to the southern boundary of the CHP site; and
 - The other running route comprising an undeveloped parcel of land to the east and south of the existing CHP site to the proposed Above Ground Installation (AGI) site. This route corridor also includes a section of Rosper Road;
- AGI Site: An undeveloped parcel of land within which will be located the AGI, allowing the tie in between the gas pipeline associated with the Proposed Development and the existing high pressure gas main that serves the CHP plant;
- Electrical and Services Connections; A parcel of land extending over the existing VPI CHP site for a new electrical connection to the existing National Grid Substation to facilitate export of electricity from the Proposed Development and various other electrical, water and service connections between the Proposed Development and the existing VPI CHP plant. The area will also serve to house contractor works and facilities during construction of the service connections;

- Construction Laydown Areas: Two areas of land in the immediate vicinity of the existing CHP site to facilitate temporary construction laydown for the Proposed Development including access corridors to allow access for construction material and staff between the laydown areas and the main power station site/gas pipeline corridor:
 - Undeveloped land to the south and the east of the existing CHP site occupying approximately the same area of land as one of the alternatives for the proposed new gas pipeline. A new temporary access off Rosper Road will be formed in this area to facilitate access for construction traffic; and
 - An undeveloped area of land to the west of the OCGT Power Station Site;
- Construction and Operational Access Area to the north of the Main OCGT Site coincident with the existing access and car park associated with the Lindsey Oil Refinery. This will constitute the operational for the main OCGT Power Station Site, the new Gas Pipeline and the AGI; and
- Existing Gas Pipeline Route: A corridor of land around an existing gas pipeline between the proposed AGI Site and an existing AGI connecting this pipeline to the NG gas network at Feeder 9. This existing gas pipeline is proposed to be used to supply gas fuel to the Proposed Development via the infrastructure described above. The Applicant may seek rights in the DCO over the Existing Pipeline Route so as to secure the ability to operate and maintain the existing gas pipeline. As this does not represent new infrastructure, the environmental effects are expected to be minimal. Where environmental effects are identified, they will be discussed in the relevant chapter of the ES.

2.1.4 These areas are illustrated on Figure 1, 2 and 2A.

2.2 The Surrounding Area

2.2.1 It should be noted that the distances referred to in this and subsequent sections refer to the areas of land on which new development (permanent and temporary) are proposed, i.e. the distances do not refer to the existing gas pipeline route corridor but to the OCGT Power Station Site, the new Gas Pipeline and the AGI.

2.2.2 The Site is located in an area comprising a mix of industrial and agricultural activities. In addition to the activities identified above, the land to the east of the Site on the other side of Rosper Road comprises agricultural fields extending approximately 1km toward the Humber Estuary before industrial activities associated with the storage and export of gas and oil and other port activities commence along the banks of the Estuary itself, approximately 1.4km from the Site at its closest point.

2.2.3 A railway spur runs north-south to the immediate west of the Site. This spur services the Lindsey Oil Refinery and joins the main line approximately 400m south west of the Site. The main line is the principal railway line in north east Lincolnshire running between Cleethorpes and Barton on Humber.

2.2.4 The area in the immediate vicinity of the Site has recently been well characterised through the EIA prepared to support a planning application for the VPI Energy Park 'A', a 49.9MW gas fired power station (Reference: PA/2018/918) submitted to North Lincolnshire Council under the Town and Country Planning Act 1990 (TCPA, as amended). It is anticipated that planning permission (if forthcoming) would be in place by Q3 2018. This application and its relation to

the Proposed Development is discussed in detail in Section 6.12 of this scoping report. Through the work associated with the VPI Energy Park 'A' EIA, a number of environmental receptors have been identified in the vicinity of the Site. Each of these is detailed below under their corresponding environmental discipline.

2.2.5 Given the previous work, it is not anticipated that this list will change through the DCO process. However, distances between the receptor and the Site should be considered approximate and are given as the distance between the receptor and the approximate closest point on the Site boundary.

2.2.6 The key environmental receptors are described in the following sections and illustrated on Figures 3 and 4.

2.3 Residential Receptors

2.3.1 Key receptors include:

- The single residential property located on Marsh Lane approximately 325m east of the Site at its closest point;
- The villages of South and North Killingholme, located approximately 1.4km and 1.6km west/ southwest of the Site respectively;
- The town of Immingham, located approximately 1.8km south of the Site at its closest point; and
- Residential properties in the vicinity of Chase Hill Road, located approximately 2.15km northwest of the Site.

2.3.2 There are no designated Air Quality Management Areas (AQMA) within 5km of the Site.

2.4 Traffic and Transport

2.4.1 Rosper Road runs approximately north-south immediately east of the Site. Rosper Road joins Humber Road approximately 480m to the southeast of the Site at a recently improved gyratory junction. Humber Road then passes underneath the railway line before joining the A160 at a roundabout. The A160 is dualled in both directions westwards from this roundabout towards the A180 and M180.

2.5 Designated Nature Conservation Sites

2.5.1 There are a number of statutory and non-statutory nature conservation sites in the vicinity of the Site. They include the following:

- Humber Estuary Special Conservation Area (SAC), Special Protection Area (SPA), Ramsar site, and Site of Special Scientific Interest (SSSI) located 1.4km north east of the Site;
- North Killingholme Haven Pits (SSSI), located 2km north of the Site and overlaps with the Humber Estuary Ramsar and SPA site;
- Eastfield Road Railway Embankment Local Wildlife Site (LWS), located 1km west of the Site;
- Burkinshaw's Covert LWS, located 400m northeast of the Site;

- Station Road Field LWS, located 400m north of the Site; and
- Rosper Road Pools LWS, located 245m south of the Site.

2.5.2 Further information on these sites and their designations is included the table below.

Table 2. Designated Nature Conservation Sites in the vicinity of the Site

Designation	Reason(s) for Designation	Relationship to the Site
Statutory Nature Conservation Sites		
Humber Estuary SAC	<p>Internationally important for its estuary and inter-tidal mudflat and sandflat habitats. Other qualifying features encompass:</p> <p><u>Habitats</u></p> <ul style="list-style-type: none"> • Sandbanks which are slightly covered by sea water all the time; • Coastal lagoons; • Salicornia and other annuals colonizing mud and sand; • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>); • Embryonic shifting dunes; • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes"); • Fixed coastal dunes with herbaceous vegetation ("grey dunes"); • Dunes with <i>Hippophae rhamnoides</i>; <p><u>Species</u></p> <ul style="list-style-type: none"> • Sea lamprey (<i>Petromyzon marinus</i>); • River lamprey (<i>Lampetra fluviatilis</i>); • Grey seal (<i>Halichoerus grypus</i>). 	1.4 km to the north-east
Humber Estuary SPA	The estuary supports important numbers of waterbirds (especially geese, ducks and waders) during the migration periods and in winter. In summer, it supports important breeding populations of bittern (<i>Botaurus stellaris</i>), marsh harrier (<i>Circus aeruginosus</i>), avocet (<i>Recurvirostra avosetta</i>) and little tern (<i>Sterna albifrons</i>).	1.4 km to the north-east
Humber Estuary Ramsar	<p>Internationally important as a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.</p> <p>Internationally important for its breeding colony of grey seal, and its assemblage of non-breeding and wintering waterfowl and the component populations of individual bird species.</p>	1.4 km to the north-east
Humber Estuary SSSI	Supports a series of nationally important habitats. These are the estuary itself (with its component habitats of intertidal mudflats and sandflats and coastal saltmarsh) and the associated saline lagoons, sand dunes and standing waters. The site is also of national importance for the geological interest at South Ferriby Cliff (Late Pleistocene sediments) and for the coastal geomorphology of Spurn. The estuary supports nationally important numbers of 22 wintering waterfowl and nine passage waders, and a nationally important assemblage of breeding birds of lowland open waters and their margins. It is also nationally important for a breeding colony of grey seal, river lamprey and sea lamprey, a vascular plant assemblage and an invertebrate assemblage.	1.4 km to the north-east

Designation	Reason(s) for Designation	Relationship to the Site
North Killingholme Haven Pits SSSI	Large saline lagoons with an exceptionally rich fauna, They are significant as roosting and feeding grounds for waterfowl, which occur in internationally important numbers in the Humber Estuary in winter.	2km to the north
Non-statutory Nature Conservation Sites		
Eastfield Road Railway Embankment LWS	Strip of sheltered, botanically-rich woodland glades containing a variety of grassland species with a calcareous influence and some scrub.	>1km
Burkinshaw's Covert LWS	Woodland dating from 1800's with scattered scrub and seasonally wet areas which support rapidly changing flora such as St John's-wort, meadow vetchling, hairy buttercup and glaucous sedge.	0.4km north
Station Road Field LWS	Predominantly grassland site with decent floristic diversity and small area of wetland which supports good range of common farmland bird and butterfly species (including yellowhammer, meadow brown and ringlet). Pond adjacent to site boundary held breeding great crested newts in 2006.	0.4km north
Rosper Pools LWS	Artificial Flood Relief Reservoir with occasionally species-rich grassy sward. Site supports many breeding, wintering and migrant birds, associated with both wetland and scrubby habitat. Water vole was recorded in 2002, and the fauna as a whole is likely to be rich.	245m south

2.6 Cultural Heritage

2.6.1 The only archaeological feature located within the Site boundary is a ditch of Iron Age date, recorded during evaluation excavation for a previous phase of work undertaken by the refinery.

- There are no World Heritage Sites or Registered Battlefields within 5km of the Site. There is one Registered Garden (Brocklesby Park) located approximately 5km south-west of the Site.
- There are five Scheduled Monuments (SMs) within 5km of the Main Site. These are:
 - Manor Farm moated site, located approximately 2km west of the Site;
 - North Garth moated site and associated enclosures, located approximately 2.4km north-west of the Site;
 - Moated site and associated earthworks at Baysgarth Farm, located approximately 2.6km north-west of the Site;
 - Manor Farm moated site, East Halton, located approximately 3.5km north of the Site; and
 - Thornton Abbey Augustinian monastery, including gatehouse, precinct, medieval road and bridge, moat, fishponds, post-Dissolution college and school, and house, located approximately 4.6km north-west of the Site.

2.6.2 There are three Grade I, one Grade II*, and 11 Grade II listed buildings located within 3km of the Site. The Grade I listed buildings are all churches (the Church of St Denys at North Killingholme, the Church of St Peter at East Halton and St Andrew in Immingham). There is a

Grade II* listed Manor House, associated with the Scheduled Monument at Manor Farm 2km west of the site. There are also 11 Grade II listed buildings within 2.5 km, including the Killingholme lighthouses located approximately 1.6km to the east of the site on the banks of the Humber River.

2.6.3 There are no Conservation Areas within 5km of the Site.

2.7 Surface Water

2.7.1 The following notable watercourses have been identified in close proximity to the Site and are summarised in Table 3 below.

Table 3: Identified Watercourses

Name of Watercourse	Location
Local Land Drain	Running parallel with and directly adjacent to the southern OCGT Power Station Site boundary between the OCGT Site and the existing VPI Power Station.
Local Land Drain	Running parallel with and directly adjacent to the eastern OCGT Power Station Site boundary and Rosper Road.
Local Land Drain	Running parallel with and directly adjacent to the northern Site boundary.
Local Land Drain	Running parallel with and directly adjacent to the western construction laydown area.
Watercourse 9 (a North East Lindsey IDB drain)	Located to the east of the OCGT Power Station Site flowing parallel with and directly adjacent to the west of Rosper Road.
Watercourse 9A (a North East Lindsey IDB)	Located to the southeast of the OCGT Power Station Site flowing parallel with and directly adjacent to the east of Rosper Road. This watercourse also flows from the south western area of the redline boundary south east towards Rosper Road forming a 'V' shaped flow path.
Series of land drains	Located approximately 53m to the west of the Site
Series of land drains	Located approximately 120m to the north of the Site
Humber Estuary (Humber Lower)	Large tidal watercourse located approximately 1.4km to the east of the Site.
Water Storage Lagoon	The water storage lagoon is located within the Lindsey Oil Refinery Site boundary and it is assumed this surface water feature comprises an artificial structure. The water storage lagoon receives water from the land drain to the west of the Proposed Development.
Settling Lagoons	Artificial structures containing stagnant water located within the red line boundary to the south west of the Gas Engine Site.
Rosper Road Pools	An Artificial Flood Relief Reservoir, located approximately 262m to the south east of the Site, to the east of Rosper Road.

- 2.7.2 In addition, the area surrounding the Site is drained via a network of small land drainage ditches that convey surface water from the surrounding greenfield areas located between the Site and the Humber Estuary.
- 2.7.3 The existing VPI Power Station Site, proposed OCGT Power Station Site are located predominantly within Flood Zone 3 classified as having a 'high risk' of flooding from fluvial or tidal sources. Flood Zone 3 comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1.0%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The site is not located within an area defined as Functional Floodplain (Flood Zone 3b).
- 2.7.4 Land within the northern area of the Site is located in Flood Zone 3 and Flood Zone 2 (Construction and Operational Access Area) and Flood Zone 1 (construction laydown area). Flood Zone 2 comprises land assessed as having between 1 in 100 and 1 in 1,000 annual probability of river flooding (0.1-1%), or between 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.1-0.5%). Land located in Flood Zone 1 is assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%). The Site in relation to the flood zones is shown on Figure 5.
- 2.7.5 There are no formal flood defences in close proximity to the proposed works; however, there are tidal flood defences in place along the entire south bank of the Humber Estuary. The existing defences to the north and east of the proposed development comprise a combination of earth embankments topped by concrete wave return walls and small areas of reclaimed land.
- 2.7.6 Although the Site is shown as not benefitting from flood defences on the Environment Agency's flood maps, information provided by the Environment Agency (through the EIA process associated with VPI Energy Park 'A') indicate the Site is located in an area that benefits from flood defences offering a standard of protection up to, and including, a 0.5% (1 in 200 year) storm event, based on the Still Water Tidal Water Levels

2.8 Geology & Hydrogeology

- 2.8.1 The Main OCGT Power Station Site is overlain by Natural Superficial Deposits comprising Devensian Till, overlying the bedrock of the Burnham Chalk formation. There are several 'stockpiles' of reworked natural material located close to the southern boundary of the site.
- 2.8.2 The Site is not located within a Source Protection Zone. The superficial geology is characterised as a Secondary 'A' Undifferentiated Aquifer, whilst the bedrock geology is classed as a Principal Aquifer.

2.9 Landscape

- 2.9.1 The Site is not located within or adjacent to any national or regional designations for landscape protection (e.g. Area of Outstanding Natural Beauty (AONB) or Green Belt land). The Site is located with National Character Area 41: the Humber Estuary, which is focussed on the expanse of the Humber Estuary and associated low-lying land. There are no Public Rights of Way (PRoW) across the Site or immediately adjacent to it. With the nearest ProW being March Lane approximately 500m to the south east of the Site.

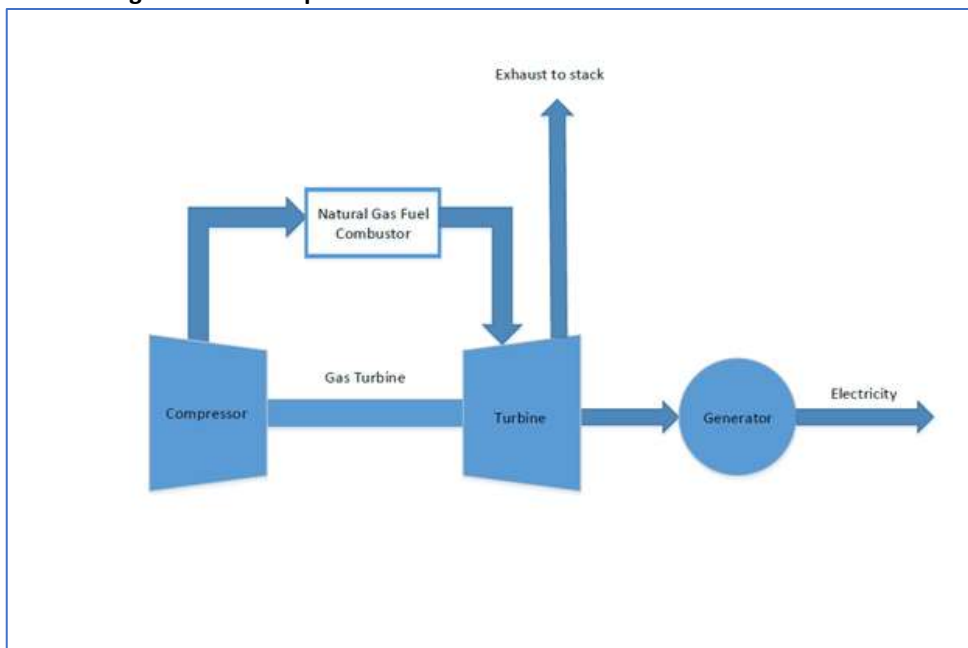
3.0 PROJECT DESCRIPTION

3.1 Introduction

3.1.1 The Proposed Development comprises the construction and operation of an Open Cycle Gas Turbine (OCGT) power station with a gross electrical output of up to 299MW.

3.1.2 In an OCGT, natural gas fuel is mixed and combusted with air from the compressor section of the gas turbine (GT) and the hot gases are expanded through the power turbine section of the GT which drives a generator to produce electricity for export to the National Grid electricity transmission system. This is illustrated in plate 1 below.

Plate 1: Diagram of OCGT operation



3.1.3 Gas turbines are widely used in the power industry as a result of multiple advantages when compared to other power plants, such as their flexibility of operation, ease of use, relatively low weight and compactness.

3.1.4 OCGTs are ideally suited to planned operation of the power station as they can be started and shutdown quickly and operate flexibly across a range of loads. An OCGT power plant of this scale could comprise a single large industrial gas turbine or multiple gas turbines, either industrial or aero derivative, with their own stacks.

3.1.5 In this instance, a single large OCGT has been selected for the Proposed Development. The rationale behind this selection is detailed in Section 4.3 of this report. The OCGT would typically have dimensions of 60m in length x 30m in width (excluding gas turbine auxiliaries and associated plant and equipment) with a typical stack height in the range of 35-45m.

3.1.6 It should be noted that dimensions above are approximate at this stage. To allow for variation in dimensions, configuration and layout during the design process; the Applicant may seek some variability within the DCO. This variability would be described in detail in the ES and

assessed in accordance with the principles of the 'Rochdale Envelope'¹ approach to allow the determination of the potential worst case environmental impacts.

3.1.7 The infrastructure proposed to be installed at the Site is likely to include:

- A single OCGT unit comprising a gas turbine, electrical generator, a stack and main transformer;
- Switchyard, associated switch gear and ancillary equipment;
- Gas receiving area, gas treatment control facilities, gas reception building and gas pipeline to a new Above Ground Installation;
- Electrical connection with a potential upgrade of switchgear or other existing equipment;
- Water supplies and pipelines;
- Auxiliary generator and liquid fuel tank for emergency electrical supplies;
- Lubricating oil, hydraulic oil and chemical storage tanks and equipment
- Workshops and stores;
- Electrical, control, administration and welfare buildings;
- Above ground raw water and fire water storage tanks;
- Storm water attenuation system or similar;
- Internal access roads and car parking;
- Landscaping and fencing;
- Auxiliary cooling equipment/ system and cooling water supply; and
- Other minor infrastructure and auxiliaries/services.

3.1.8 Laydown areas for the storage of plant and equipment and siting of construction contractors' compounds during construction have been incorporated within the Site boundary as described above. Similarly construction access off Rosper Road is included.

Electrical Grid Connection

3.1.9 The Proposed Development would connect to the existing NG substation within the existing VPI CHP plant power station.

3.1.10 The connection between the Proposed Development and NG would comprise either overhead or below ground cables, or a combination of both.

¹ The Rochdale Envelope approach is derived from planning case law and is described in the Overarching National Policy Statement for Energy (EN-1) (Ref 5-2) as: "...a series of maximum extents of a project for which the significant effects are established. The detailed design of the project can then vary within this 'envelope' without rendering the ES inadequate."

Gas Connection

- 3.1.11 Gas would be supplied to the Proposed Development by means of an existing and new gas connection pipeline as described in Section 2.1 above.
- 3.1.12 The new gas connection pipeline would link into the existing high pressure gas main located south of the existing VPI CHP plant via a new AGI. The gas would be conveyed by a new c.300m underground pipeline around the east or to the west of the existing VPI CHP plant, along the public highway, Rosper Road, and then entering the Proposed Development site.

Services Connections

- 3.1.13 Additional essential services and control connections will be made between the Proposed Development and the existing VPI CHP plant. These are necessary to ensure safe operation and control and include water and compressed air, electrical and control cable connections, telecoms, fire and security systems.

Carbon Capture Readiness

- 3.1.14 As the output capacity of the Proposed Development is less than 300MW, the power station does not fall under the provisions of the Carbon Capture Readiness (Electricity Generating Stations) Regulations 2013 (the CCR Regulations), which transposed Article 36 of the Industrial Emissions Directive (IED) into UK legislation.
- 3.1.15 The CCR Regulations provide that no order for development consent (in England and Wales) may be made in relation to a combustion plant with a capacity at or over 300MWe unless the relevant authority has determined (on the basis of an assessment carried out an applicant) whether it is technically and economically feasible to retrofit the equipment necessary to capture the carbon dioxide that would otherwise be emitted from the plant, and to transport and store such carbon dioxide from the site.
- 3.1.16 As the CCR Regulations do not apply to the Proposed Development, no space allocation for future retrofit of carbon capture technology has been included within the Site.

3.2 Construction

- 3.2.1 It is currently anticipated that construction of the Proposed Development would commence around Q1 2021.
- 3.2.2 Construction of the Proposed Development is anticipated to create approximately 150 temporary construction jobs at peak. Details of the likely traffic movements during construction will be considered within the EIA.
- 3.2.3 Anticipated normal construction working hours would be Monday – Friday 07:00 to 19:00 and Saturday 08:00 to 18:00, should on-site construction works need to be conducted outside of these normal construction working hours they would comply with any restrictions agreed with the planning authorities through the DCO process, and in particular regarding control of noise and traffic.

- 3.2.4 The ES will include details of the proposed construction activities and their anticipated duration, along with an indicative programme of each phase of the works.
- 3.2.5 The ES will also be supported by a framework Construction Environmental Management Plan (CEMP), which will describe the specific mitigation measures to be followed by the appointed construction contractor to reduce potential nuisance impacts from:
- Use of land within the Site for temporary laydown areas, contractor facilities and offices, etc.;
 - Construction traffic (including parking and access requirements);
 - Earthworks;
 - Noise and vibration;
 - Dust generation; and
 - Waste generation.
- 3.2.6 The framework CEMP will identify all the procedures to be adhered to throughout construction; this framework will then be adopted by the appointed contractor in the drafting of their more detailed CEMP prior to commencement of construction.
- 3.2.7 Contracts with companies involved in the construction works will incorporate environmental control, health and safety regulations and current guidance, with the intention that construction activities are sustainable. All contractors involved with the construction stages would be required to meet agreed best practice and all relevant environmental legislation including: Control of Pollution Act 1974 (COPA) (Ref 3-1), Environment Act 1995 (Ref 3-2) and Hazardous Waste (England and Wales) Regulations 2005 (Ref 3-3).
- 3.2.8 All construction works would adhere to the Construction (Design and Management) Regulations 2015 (CDM).
- 3.3 Operation**
- 3.3.1 The Proposed Development would be on standby and needs to be available at all times. It is most likely to run during periods of low electricity supply or high demand on the transmission network, or when required to provide technical services to support the National Grid. This is expected to be weighted towards the winter period, for a few hours at a time. However, as the operation of the plant is driven by the dynamics of the energy market, the plant could run for longer periods, at any time of day, up to the maximum allowed under its Environmental Permit.
- 3.3.2 Operation of the Proposed Development is anticipated to create up to 15 permanent operational roles. Depending on the degree of integration with the existing VPI CHP plant and VPI Energy Park 'A', these may be new jobs or roles undertaken by personnel from the existing VPI CHP plant.
- 3.4 Decommissioning**
- 3.4.1 The plant is capable of a life expectancy of up to 40 years or more, depending on running hours. Eventually decommissioning would involve the removal of the plant. The gas and

electricity connections would be disconnected and made safe. The OCGT could either be removed as a unit for reuse elsewhere (depending on its condition) or alternatively dismantled on site and removed.

- 3.4.2 There is limited information available at this stage regarding decommissioning methods and timescales. However, decommissioning is not anticipated to present any significant environmental impacts beyond those assessed for the construction phase of the Project.

4.0 PROJECT ALTERNATIVES

4.1 Alternatives to the Proposed Development

4.1.1 Alternatives to the Proposed Development that have or are being considered include:

- Similar development at an alternative site; and
- Alternative technologies.

4.1.2 A 'no development' alternative would not deliver the additional electricity generation capacity associated with this Nationally Significant Infrastructure Project and which NPS EN-1 recognises is urgently needed (see Section 5), and has therefore not been considered further.

4.2 Alternative Sites

4.2.1 The Site has been selected by the Applicant for the development of a OCGT power station, as opposed to other potentially available sites for the following reasons:

- The Site is currently vacant is situated in an industrial setting with few immediate receptors, and is immediately adjacent to another major power generating facility;
- The site has excellent grid, water and transport links and is a brownfield site which is considered more attractive to redevelop than a greenfield one for power generation; and
- The Site is adjacent VPIs existing VPI CHP plant providing synergies with the existing workforce, services and utilities; and
- The Site is located in close proximity to the National Electricity and Gas Transmission Networks, through existing connections on the adjacent VPI CHP Site.

4.3 Alternative Technologies

4.3.1 In addition to the OCGT several other electricity generation technologies were considered for the site. These included combined cycle gas turbines (CCGT), gas engine generators, diesel engine generators and battery storage options.

4.3.2 Through early project concept engineering, diesel engine generators were discounted due to their high noise and emissions levels and also because they would require large volumes of diesel fuel which would need to be delivered by road and require bulk storage. The battery storage concept was also discounted as it did not provide pure additional generation capacity and Grid support that is anticipated in the near future and it would not take full advantage of the synergies available at the site i.e. the existing gas connection and capacity.

4.3.3 A natural gas fuelled technology was thereby selected for the Proposed Development for the reasons outlined in this chapter. This would facilitate a CCGT, gas engine or OCGT project. The CCGT concept was dismissed as this technology is more suitable for baseline power generation and wouldn't provide the rapid start and ramp-up and generation flexibility that would benefit NG in responding to the intermittency of renewables generation. Gas engine generators were also dismissed because they are relatively small capacity and a large number of them would have to be built to provide 299MW whereas this could be achieved with a single OCGT.

- 4.3.4 The concept engineering phase concluded that a single OCGT was the most appropriate technology for the Site. As discussed in Section 3.1 above, further technical evaluation of the dimensions, configuration and layout is ongoing through the design process. Where appropriate any variability being sought in the DCO will be subject to assessment in accordance with the Rochdale Envelope as described in Section 2 above.. Where the type of technology has the potential to materially change the environmental effects of the Proposed Development (i.e. air quality and noise emissions and landscape and visual impact), the various options will be considered through the EIA process, utilising proportionate use of the Rochdale Envelope approach where appropriate.
- 4.3.5 A brief overview and justification for the chosen technology will be provided in the ES, including the evaluation of what constitutes Best Available Techniques (BAT) for this Proposed Development regarding the options currently under investigation mentioned above.
- 4.3.6

5.0 PLANNING POLICY

5.1 Introduction

5.1.1 This section sets out the main planning policy documents taken into account in terms of defining the scope of the EIA for the Proposed Development.

5.2 National Policy Statements

5.2.1 The policy framework for examining and determining applications for NSIPs is provided by National Policy Statements (NPSs) and Marine Policy Statements (MPSs). Section 104 of the Planning Act 2008 (as amended) requires the Secretary of State (SoS) to determine applications for NSIPs in accordance with the relevant NPS or MPS, unless this would:

- Lead to the UK being in breach of its international obligations;
- Be in breach of any statutory duty that applies to the Secretary of State;
- Be unlawful;
- The adverse impacts of the development outweigh its benefits; or
- Be contrary to any Regulations that may be made prescribing other relevant conditions.

5.2.2 The Department of Energy and Climate Change, which became part of Department for Business, Energy & Industrial Strategy in July 2016, sets out a number of NPSs relating to nationally significant energy infrastructure. A number of NPSs are relevant to the Proposed Development, as follows:

- Overarching National Policy Statement for Energy (EN-1);
- National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2);
- National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4); and
- National Policy Statement for Electricity Networks Infrastructure (EN-5).

5.2.3 There is no relevant MPS as the Proposed Development does not affect a marine area.

5.2.4 Part 4 of EN-1 sets out the ‘assessment principles’ that both applicants and the Secretary of State should consider when preparing and determining applications for nationally significant energy infrastructure. Paragraph 4.1.2 emphasises the need for the Infrastructure Planning Commission (now the Secretary of State) to start with a presumption in favour of granting consent to applications for energy NSIPs. Paragraph 4.1.3 further outlines that the decision-maker should take the following into account when considering any proposed development:

- *Its potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and*
- *Its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.*

- 5.2.5 Paragraph 4.1.4 continues by stating that within this context the decision-maker should take into account environmental, social and economic benefits and adverse impacts at national, regional and local levels.
- 5.2.6 Other assessment principles include the matters to be covered within any ES, the Habitats and Species Regulations; the consideration of alternatives; criteria for ‘good design’; consideration of CHP; climate change adaptation; and grid connection, amongst others.
- 5.2.7 Part 5 of EN-1 refers to ‘generic impacts’ of which both the decision-maker and applicant should consider in respect of an application comprising the development of energy infrastructure. These include air quality and emissions; biodiversity; landscape and visual; and flood risk impacts, amongst others. Paragraph 5.1.2 emphasises the need for applicants to identify the impacts of their proposals in the ES in terms of those covered by the NPSs and any others that may be relevant.
- 5.2.8 In addition to a number of the assessment principles and generic impacts covered by EN-1 (where relevant to fossil fuel generating stations); EN-2, EN-4 and EN-5 set out the factors (e.g. factors influencing site selection) and ‘assessment and technology specific’ considerations to be taken into account in the preparation and assessment of applications for fossil fuel generating stations, gas pipelines and electricity network infrastructure; including relevant environmental matters, such as, amongst others, noise and vibration, landscape and visual, air quality, water quality, soil and geology, transport, and biodiversity.

5.3 Other matters that may be ‘Important and Relevant’

- 5.3.1 In making decisions on applications for NSIPs, Section 104 of the PA 2008 also states that the decision-maker must have regard to any matters that are both ‘important and relevant’ to their decision. Paragraph 4.1.5 of EN-1 offers some clarification as to what may constitute as both important and relevant, including other national planning policy and local planning policy.
- 5.3.2 In the event of a conflict between documents and a NPS however, the latter prevails for the purposes of decision-making.

National Planning Policy Framework and Planning Practice Guidance

- 5.3.3 The National Planning Policy Framework (NPPF) was adopted in March 2012. The policies contained within the NPPF are expanded upon and supported by the ‘Planning Practice Guidance’, which was published in March 2014.
- 5.3.4 The NPPF sets out the Government’s planning policies for England and how these are to be applied. It is a material consideration in planning decisions. Paragraph 3 of the NPPF makes it clear that the document does not contain specific policies for NSIPs and that NSIP applications will be determined by the decision making framework set out in the Planning Act 2008, relevant NPSs and any other matters considered to be both important and relevant. Paragraph 3 clarifies that matters considered both important and relevant to NSIPs may include the NPPF.
- 5.3.5 Potentially relevant policies to the scope of the EIA include promoting sustainable transport; requiring good design; promoting healthy communities; conserving and enhancing the natural and historic environment; and meeting the challenge of climate change and mitigating its effects.

5.3.6 The Ministry of Housing, Communities and Local Government has announced that the NPPF is currently being revised in order to implement the planning reform package from the housing White Paper, the Planning for the right homes in the right places consultation and the announcements at Autumn Budget 2017. Due to the housing and plan-making focus of planning reform, it is unlikely that the draft NPPF when published could affect the scope of the EIA for the Proposed Development.

5.4 **Local planning policy**

5.4.1 The Site is located primarily within the administrative boundary of North Lincolnshire Council (NLC) and a small section of the Existing Gas Pipeline Route lies within the administrative boundary of North East Lincolnshire Council (NELC).

5.4.2 While EN-1 (Ref 1) recognises that local development plan documents may be both important and relevant to decision making; to reiterate, in the event of conflict with an NPS, it is expected that the latter will prevail.

5.4.3 Within NLC's area, the following development plan documents will be considered during the EIA process:

- North Lincolnshire Core Strategy (Adopted June 2011);
- North Lincolnshire Minerals and Waste Development Plan Document: Humber Area Local Aggregate Assessment (Draft) (November 2013);
- North Lincolnshire Housing and Employment Land Allocations Development Plan Document (Adopted March 2016); and
- North Lincolnshire Local Plan (Saved Policies) (Adopted May 2003).

5.4.4 The following NLC policies are considered relevant to the Proposed Development:

Core Strategy:

- CS1 – Spatial Strategy for North Lincolnshire;
- CS2 – Delivering More Sustainable Development;
- CS12 – South Humber Bank Strategic Employment Site;
- CS16 – North Lincolnshire's Landscape, Greenscape and Waterscape;
- CS17 – Biodiversity;
- CS18 – Sustainable Resource Use and Climate Change;
- CS19 – Flood Risk;
- CS20 – Sustainable Waste Management;
- CS21 – Minerals;
- CS25 – Promoting Sustainable Transport; and
- CS26 – Strategic Transport Infrastructure Proposals.

Local Plan:

- IN1 – Industrial Development Location and Uses;
- IN3 – Industrial and Commercial Development in the South Humber Bank Area;
- LC1 – Special Protection Areas, Special Areas of Conservation and RAMSAR Sites;
- LC5 – Species Protection;
- LC7 – Landscape Protection;
- LC12 – Protection of Trees, Woodland and Hedgerows;
- LC20 – South Humber Bank- Landscape Initiative;
- HE9 – Archaeological Excavation;
- M23 – Oil and Gas Production;
- DS1 – General Requirements;
- DS7 – Contaminated Land;
- DW11 – Polluting Activities;
- DS13 – Groundwater Protection and Land Drainage;
- DS15 – Water Resources;
- DS16 – Flood Risk;
- T1 – Location of Development;
- T2 – Access to Development; and
- T18 –Traffic Management.

Housing and Employment Land Allocations Development Plan:

5.4.5 The Site is identified as falling within Employment Land Allocation SHBE-1 South Humber Bank.

5.4.6 South Humber Bank needs:

'900 hectares (gross area) of B1 (Offices/Light Industrial), B2 (General Industry) and B8 (Storage and Distribution) port related activities to take special advantage of its location within an existing port environment, flat topography and being adjacent to a deep water channel of the Humber Estuary.'

'The expected port related activities on the site will in the main be heavy industrial users meaning pollution and waste control measures will be crucial to the success of the site in sustainability terms.'

5.4.7 There are no relevant policies contained with the Humber Area Local Aggregate Assessment document.

5.4.8 Within NELC's area, the recently adopted North East Lincolnshire Local Plan 2013 to 2032 (Adopted March 2018) will be considered during the EIA process. The following policies from the Local Plan are considered relevant to the Proposed Development:

- SO1 – Population;
- SO2 – Climate change;
- SO3 – Economy;
- SO5 – Social and health inequality;
- SO6 – Built, historic and natural environment;
- SO7 – Transport;
- SO10 – Minerals and Waste;
- Policy 6 – Infrastructure;
- Policy 32 – Energy and low carbon living;
- Policy 33 – Flood risk;
- Policy 34 – Water management;
- Policy 37 – Safeguarding transport infrastructure;
- Policy 39 – Conserving and enhancing the historic environment;
- Policy 41 – Biodiversity and Geodiversity; and
- Policy 42 – Landscape.

5.5 The need for the Proposed Development

5.5.1 The 'need' that exists for new electricity generating infrastructure, such as that proposed, is confirmed in the NPs for energy infrastructure that were designated by the SoS for BEIS (then the Department of Energy and Climate Change) in July 2011. These NPSs form the primary basis for decisions by the IPC on nationally significant energy infrastructure that falls to be considered under the PA 2008.

General need for energy infrastructure

5.5.2 As explained above, NPSs EN-1, EN-2, EN-4 and EN-5 are the most relevant to the Proposed Development and of the four, EN-1 sets out the 'need' for new energy infrastructure.

5.5.3 Part 2 of EN-1 states that outlines the policy context and paragraph 2.1.2 highlights the need for infrastructure that produces energy, when energy is considered to be '*vital to economic prosperity and social well-being*'. The energy NPSs consider the vital role that large infrastructure plays in securing energy supplies.

5.5.4 The Government's commitment 'The road to 2050', set out in Section 2.2, seeks to meet the UK's legally binding target to cut greenhouse gas emissions by at least 80% by 2050, compared to 1990 levels. It identified a number of key themes of Government energy policy, including the transition to a low carbon economy; the power sector and carbon emissions; electricity market reform; and the security of energy supplies.

- 5.5.5 Paragraphs 2.2.16- 2.2.19 states that the Government is looking at a variety of reforms in order to promote investment so as to replace aging infrastructure. Paragraph 2.2.20 states that in order to manage the risks to achieving security of supply the UK needs:
- Sufficient electricity capacity to meet demand at all times, including a ‘safety margin of spare capacity’ to accommodate unforeseen fluctuations in supply or demand;
 - Reliable associated supply chains (for example, fuel for power stations) to meet demand as it rises; and
 - A diverse mix of technologies and fuels (and fuel supply routes), so that it does not rely on any one technology or fuel.
- 5.5.6 Part 3 of EN-1 sets out the need for nationally significant energy infrastructure. Paragraph 3.1.1 states that the UK ‘needs all the types of energy infrastructure covered by this NPS in order to achieve energy security’ and that the ‘Government does not consider it appropriate for planning policy to set targets for or limits on the different technologies’ (Paragraph 3.1.2).
- 5.5.7 Paragraph 3.1.3 further states that the IPC (now the Examining Authority) should assess applications for infrastructure covered by the energy NPSs on the basis that ‘the Government has demonstrated that there is a need for those types of infrastructure’ and that the IPC should ‘give substantial weight to the contribution which projects would make towards satisfying this need when considering applications for development consent under the Planning Act 2008’.
- 5.5.8 Section 3.3 of Part 3 of EN-1 sets out why the Government believe that there is an urgent need for new electricity infrastructure, including:
- Meeting energy security and carbon reduction objectives – all types of energy infrastructure covered by the NPS are needed to achieve energy security in the UK at the same time as reducing greenhouse gas emissions;
 - The need to replace closing electricity generating capacity – at least 22 GW of existing electricity generating capacity will need to be replaced in the coming years, as a result of aging power stations and tightening environmental regulation. Additionally, 10 GW of nuclear generating capacity is expected to close over the next 20 years;
 - The need for more electricity capacity to support the increased supply from renewables – decarbonisation of electricity generation is reliant on a dramatic increase in the amount of renewable energy; however, some renewable sources (such as wind, solar and tidal) are intermittent and cannot be adjusted to meet demand. Furthermore, EN-1 recognises that there will still be a role for fossil fuel generation to provide a cost-effective means of ‘back up’ electricity generation at short notice to support renewable technologies; and
 - Future increases in electricity demand – the demand for electricity is expected to increase and total electricity consumption could double by 2050. Depending upon the choice of how electricity is supplied, total capacity may need to more than double to be sufficiently robust to all weather conditions.
- 5.5.9 Paragraph 3.3.15 states the urgency at which new energy infrastructure should be brought forward as soon as possible and certainly within the next 10-15 years.
- 5.5.10 The Government would like to see a significant proportion of new electricity to come from low carbon generation (paragraph 3.3.22).

The role of fossil fuel generating stations

- 5.5.11 Section 3.3 (paragraph 3.3.4) of EN-1 highlights the benefits of having a diverse mix of all types of power generation:

'It means we are not dependent on any one type of generation or one source of fuel of power and so helps to ensure security of supply...the different types of electricity generation have different characteristics which can complement each other...'

- 5.5.12 Paragraph 3.6.1 of EN-1 emphasises the vital role of fossil fuel power stations and emphasises that they will *'continue to play an important role in our energy mix as the UK makes the transition to a low carbon economy'*.

- 5.5.13 Paragraph 3.6.2 recognises the important role that gas continues to play in the electricity sector, *'providing vital flexibility to support an increasing amount of low-carbon generation'*, which will in turn protect the *'UK market from disruptions to supply'*.

- 5.5.14 It is further argued that atmospheric emissions of carbon dioxide are produced when fossil fuels are used to generate electricity, which depends on the type of fuel and age and design of the power station, to name a few. However, gas is considered to produce half the amount of carbon dioxide as coal, per unit of electricity generated.

- 5.5.15 The continuing need for fossil fuel generation is confirmed at paragraph 3.3.8 of EN-1, as follows:

'...a number of fossil fuel generating stations will have to close by the end of 2015. Although this capacity may be replaced by new nuclear and renewable generating capacity in due course, it is clear that there must be some fossil fuel generating capacity to provide back-up for when generation from intermittent renewable generating capacity is low and to help with the transition to low carbon electricity generation. It is important that such fossil fuel generating capacity should become low carbon, through development of CCS, in line with carbon reduction targets. Therefore there is a need for CCR [carbon capture ready] fossil fuel generating stations...'

- 5.5.16 For these reasons, the Applicant considers that there is a clear and compelling national need for the development of a new gas-fired electricity generating station and has selected the Site on which to do so for technical, environmental and commercial reasons. The Applicant therefore proposes to seek a DCO for the construction and operation of a gas-fired power station and associated gas and electrical connections at the Site.

6.0 POTENTIALLY SIGNIFICANT ENVIRONMENTAL ISSUES

6.1 Introduction

6.1.1 The following sections identify the potential environmental impacts associated with the Proposed Development proposed for inclusion within the EIA. The methodology and assessment criteria that are proposed to be used to assess the potential significance of the identified impacts are also outlined alongside potential mitigation measures for implementation following assessment.

6.2 Air Quality

Baseline Conditions

6.2.1 There are no declared Air Quality Management Areas (AQMA) within 5km of the Site. There is one former AQMA located in the town of Immingham approximately 3.25km southeast of the Site; however, this was revoked in 2016.

6.2.2 Key receptors include the residential receptors identified in Section 2.3 above and the Humber Estuary SAC & SPA identified in Section 2.5.

6.2.3 VPI Immingham CHP, an affiliate of the Applicant contributes to an ambient air quality monitoring station (along with the other local principal industries). This is located at Killingholme Primary School, School Road, South Killingholme and measures ambient air concentrations of nitrogen dioxide (NO₂), sulphur dioxide (SO₂) and particulates (PM₁₀). Results from the monitoring station indicate that local air quality for pollutants that could be released from the Proposed Development is generally good.

Scope of the Assessment:

6.2.4 The following potential impacts may be associated with the Proposed Development:

- Emission of pollutants, to air from the stack during operation;
- Emission of pollutants to air from vehicles associated with all phases of the proposed development; and
- Construction dust and mobile plant exhaust emissions generated during construction and decommissioning through reference to the transport assessment described below.

6.2.5 The Proposed Development, when operational, would emit known pollutants to air, via a stack(s). These would primarily be the combustion products nitrogen oxides (NO_x) and carbon monoxide (CO), for which Air Quality Strategy (AQS) objectives have been set as part of the National Air Quality Strategy (NAQS), as well as CO₂ and potentially additional trace pollutants. Sulphur dioxide (SO₂) emissions and particulate emissions will be minimal as the plant will be running on natural gas.

6.2.6 The plant would be designed to comply with the requirements of the IED in accordance with Environment Agency guidance. The relevant Directive will set Emission Limit Values for pollutant releases to air from the plant that would be met. Performance against these emission limit values would be regulated through an Environmental Permit.

- 6.2.7 An air impact assessment will be undertaken for the main point source emissions, utilising air dispersion modelling to assess the impact to air quality potentially brought about through the generation and dispersion of emissions from the operation of the Proposed Development. The study will be desk-based and will assess the predicted concentrations of combustion pollutants specifically detailed in the IED, which are potentially hazardous to human health and designated habitats sites, at identified receptors (such as residential homes, nature sites) within the local area.
- 6.2.8 The modelling will be based on Emission Limit Values set by the IED and at full operating load, thereby presenting a worst-case scenario in the ES. Should it be deemed appropriate to model lower loads, justification for this will be provided and the load clearly stated in the assessment. Modelling will be undertaken in accordance with Environment Agency guidance (Ref 6-1).
- 6.2.9 The atmospheric dispersion modelling study of operational emissions will be undertaken using the Atmospheric Dispersion Modelling System (ADMS) model, currently version 5.2. ADMS is widely used by industry and the regulatory authorities.
- 6.2.10 The dispersion modelling study will be used to determine the most appropriate height for the emission stack based on the resultant maximum short-term and long-term ground level concentrations predicted. Several different stack heights will be evaluated.
- 6.2.11 Potential impacts on ecological receptors will be assessed, including internationally designated habitat sites within 10km of the Proposed Development and nationally and non-statutory habitat sites within 2km of the Proposed Development, in accordance with EA guidance.
- 6.2.12 An air quality screening assessment will be undertaken on the potential effects of road traffic on the local road network associated with the construction of the Proposed Development, in accordance with the methods outlined in the EPUK/IAQM Land-Use Planning & Development Control: Planning For Air Quality guidance (Ref 6-2). The Highways England's (HE) Design Manual for Roads and Bridges (DMRB, Ref 6-3) screening model will be used. Based on expected traffic volumes, it is not considered that detailed ADMS-Roads dispersion modelling will be required.
- 6.2.13 In addition, potential impacts and nuisance from site clearance, construction dust and mobile plant exhaust emissions generated during the construction period of the plant will be considered using a screening assessment and supplemented by case studies where appropriate. This will be performed in accordance with the Institute for Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (Ref 6-4). Similar effects during the decommissioning stage will also be considered. Where necessary, mitigation measures will be proposed for the control of dust and site plant emissions during site preparation and construction works to minimise the potential effects.
- 6.2.14 The AQS objectives set within the National Air Quality Strategy are intended to protect the most sensitive parts of the population. Therefore it is considered that demonstrating compliance with such objectives would mean that a separate Human Health Risk Assessment (HHRA) for this type of development is not required.
- 6.2.15 Given the subjectivity that can occur when attempting to assign a level of significance to a given air quality impact, AECOM has produced a set of quantitative significance criteria for air quality matters. These are based on Environment Agency and the IAQM guidance (Ref 6-1 and

6-2) and will be used to determine the significance of the predicted effects of the Proposed Development.

6.3 Traffic and Transport

Baseline Conditions

6.3.1 The Site has good access to the road network with Rosper Road joining Humber Road approximately 500m to the southeast of the Site as described in Section 2.4 above.

6.3.2 There are a limited opportunities for travelling to the Proposed Development on foot as it is located further than 2km from any significant residential areas. There are also no footways or street lighting on Rosper Road. There are also limited opportunities for travelling to the site via bus. Rosper Road is not a bus route and the nearest bus stops are 2.7km away in South Killingholme (Town Street) and 2.6km away in Immingham (Manby Road). Rail Stations are located at Habrough (6.1km away) and Ulceby (6km away). Both stations operate regular train services.

Scope of the Assessment

6.3.3 The following potential impacts may be associated with the Proposed Development:

- Generation of traffic during construction (and decommissioning) affecting the local and strategic road network; and
- Generation of traffic during operation affecting the local and strategic road network.

6.3.4 A preliminary assessment has been undertaken to establish the level of traffic that is likely to be associated with the Proposed Development. The principal vehicle movements are anticipated to be associated with the construction phase of the Proposed Development, although the volume of construction vehicles associated with the delivery of plant and the labour force has not been fully determined at this stage. From previous experience at similar power station construction projects the traffic flows are likely to be between 600 and 900 one-way vehicle movements per day during the peak construction period.

6.3.5 During the operational phase of the development, it is anticipated that there would be up to approximately 15 operational roles. Depending on the degree of integration with the existing CMP plant and VPI Energy Park 'A'; these might be new jobs or roles undertaken by existing personnel. Staff would travel to and from work in a variety of directions. Fuel would predominantly be delivered by pipeline and other operational and maintenance consumables are likely to be minimal. Therefore, it is considered that the effects of operational traffic would be negligible and a detailed assessment of the operational phase of the development is not proposed for the ES.

6.3.6 To fully address the impacts of the construction phase on the transport network, at this stage it is proposed that a Transport Assessment (TA) will be produced, although the requirement for a TA will be confirmed following determination of the number of construction movements, in liaison with NLC. The scope for the TA will follow the guidelines set out in the Department of Communities and Local Governments 'Planning Practice Guidance' document (March 2014) (Ref 6-5). NLC and Highways England will be consulted so that their specific requirements can be accommodated within the TA scope.

- 6.3.7 The traffic and transport chapter in the ES will summarise the salient points from the TA. It will also relate the magnitude and significance of potential impacts to criteria contained in the 'Guidelines for the Environmental Assessment of Road Traffic' document, produced by the Institute of Environmental Management & Assessment (Ref 6-6).
- 6.3.8 The scope of the TA would cover the following key areas:
- A review of national, regional and local transport policy;
 - A description of baseline and future baseline conditions, including link and junction flows (described further below), a review of highway safety issues including examination of personal injury accident data and consideration of accessibility by all main transport modes;
 - Calculation of construction traffic flows over the period of construction;
 - Distribution and assignment of construction traffic flows to the road network, including the identification of routes for abnormal loads such as the delivery of generators and transformers;
 - Local network impact analysis – the size of the study area will be confirmed with Nottinghamshire County Council and Highways England, and key junctions may be identified by these stakeholders that require detailed capacity analysis;
 - Consideration of the local public rights of way for leisure and commuting uses, and whether their use would be affected by the Proposed Development;
 - Cumulative impact assessment, particularly with VPI Energy Park 'A'; and
 - The formulation of mitigation measures, if required, such as a Construction Worker Travel Plan to promote sustainable journeys during the construction phase of the development and where possible reduce single occupant car journeys, and a Construction Traffic Management Plan to seek to control the routing and impact that HGVs will have on the local road network during construction.
- 6.3.9 The availability of baseline traffic count data will be discussed with the NLC during the consultation stage of the TA together with the scope of the highway network to be included. Where no existing traffic counts are available new traffic surveys will be undertaken to provide a robust and up to date baseline for the TA and ES Chapter.
- 6.3.10 A summary of any residual impacts will be provided should the proposed mitigation not fully address the impact of the Proposed Development on the transport network.

6.4 **Noise and Vibration**

Baseline Conditions

- 6.4.1 The Proposed Development would be located within the existing industrial setting of the VPI CHP plant and Lindsey Oil Refinery (LOR).
- 6.4.2 VPI Immingham CHP, an affiliate of the Applicant conducts regular (approximately annual) surveys of ambient noise levels at a single receptor (the single dwelling located on Marsh Lane) in order to characterise the noise from the existing power station as well as general ambient noise levels in the area. Results from recent monitoring surveys indicate that the local

ambient noise environment is dominated by the industrial noise including the oil refineries, the existing VPI CHP plant site and other sites.

Scope of the Assessment

- 6.4.3 The assessment and control of noise and vibration emissions from the development will involve establishing the current baseline, agreeing noise limits at sensitive receptors and mitigation of effects where necessary.
- 6.4.4 The following potential impacts may be associated with the Proposed Development:
- Construction and decommissioning noise and vibration impacts, including construction and decommissioning traffic on public roads;
 - Operational noise impacts from the proposed plant, including commissioning; and
 - Operational noise impacts from road traffic on public roads.
- 6.4.5 Based on the distance between the Site and the nearest residential receptors, significant vibration impacts associated with on-site activities are considered unlikely, although they will still be considered, where relevant, as part of the EIA.
- 6.4.6 The proposed scope of the noise and vibration assessment comprises:
- Confirmation or identification of the nearest noise sensitive receptors;
 - Liaison with NLC's Environmental Health Officer(s) to agree scope and methodology of noise assessment, including whether any supplementary baseline monitoring is required for beyond that already gathered;
 - Establishment of baseline noise levels in the locality (as agreed necessary);
 - Qualitative assessment of construction/decommissioning noise and vibration impacts based on available information on the likely works;
 - Quantitative assessment of operational noise associated with the proposed plant; and
 - Screening assessment and where necessary, further quantitative assessment of road traffic noise level changes on affected roads during operation and construction/decommissioning based upon the standard methodology outlined in the Calculation of Road Traffic Noise by the Department of Transport (Ref 6-7).
- 6.4.7 The noise and vibration assessment will be carried out in accordance with the following guidance:
- NPPF, 2012 (Ref 5-3);
 - Noise Policy Statement for England, (Ref 6-8);
 - Planning Practice Guidance for Noise, (Ref 6-9) and.
 - NPS EN-1 (Ref 5-2).
- 6.4.8 Additionally, reference will be made, but not be limited, to the following:
- British Standard (BS) 5228-1 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 1: Noise & Part 2 Vibration (Ref 6-10 & Ref 6-11);

- BS 5228-2 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration';
- International Organisation for Standardisation (ISO) 9613-2: 1996 'Attenuation of sound during propagation outdoors. Part 2: General method of calculation'(Ref 6-12);
- BS 4142: 2014 'Methods for rating and assessing industrial and commercial sound'(Ref 6-13);
- BS 8233:2014 'Methods for rating and assessing industrial and commercial sound'(Ref 6-14);
- World Health Organization (WHO) (1999), 'Guidelines for Community Noise'(Ref 6-15);
- World Health Organization (WHO) (2009), 'Night Noise Guidelines for Europe'(Ref 6-16);
- BS 7385: 1993 'Evaluation and measurement for vibration in buildings'(Ref 6-17); and
- BS 6472: 2008 'Guide to evaluation of human exposure to vibration in buildings'(Ref 6-18);

6.4.9 A qualitative assessment of construction noise and vibration impacts is proposed given that a construction contractor will not be appointed at the time of preparing the EIA. Therefore, the detailed site specific information on the construction works required to complete a quantitative assessment will not be available. The focus of the assessment will, therefore, be on recommendations for appropriate mitigation. Additionally, noise increases at sensitive receptors due to any construction traffic on public roads will be calculated according to the methods given in CRTN.

6.4.10 The operational noise impact of the Proposed Development will be predicted using computer noise modelling software (SoundPLAN or Cadna-A), based on information regarding plant layout, the operating conditions and the predicted levels of noise generated by plant items and vehicles, based on manufacturer data. The noise modelling software enables a detailed consideration of the proposed equipment and buildings, existing surrounding buildings and ground features. The software implements the methodology in ISO 9613-2 for the calculation of noise levels from industrial sources.

6.4.11 The significance of the noise impact of the Proposed Development during operation will be assessed using the method given in BS 4142 and will make reference to guidance provided by the World Health Organisation (WHO) and contained in BS 8233. BS 4142 provides a method for rating the acceptability of noise from industrial sources affecting noise-sensitive receptors, and the WHO/BS 8233 guidance provides information regarding assessment of sleep disturbance. Further details of the approach will be discussed and agreed with the Environmental Health Department at NLC.

6.4.12 All phases of the Proposed Development may have a potentially significant impact on traffic flows on local roads around the Site. The change in road traffic noise levels, at a selection of relevant receptors, will be predicted using the standard methodology outlined in the CRTN. The predictions will be based on baseline and with-development traffic data provided as part of the proposed traffic and transport assessment (see Section 6.3).

6.4.13 The significance of changes in road traffic noise levels will be assessed based on a range of relevant guidance including the DMRB.

6.5 Ecology and Nature Conservation

Baseline Conditions

- 6.5.1 The Site itself does not carry any designations for ecology or nature conservation purposes. There are no ancient woodlands in the vicinity of the Site, and there are no Higher Level Countryside Stewardship agreements applied to the Site. A summary of the statutory and non-statutory designated sites within the defined study area is provided in Table 2 in Section 2.5 above.
- 6.5.2 The Humber Estuary is located approximately 1.4 km north east of the site and is a nature conservation asset of international importance, which is reflected in its designations as a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI). There are no other SPAs, SACs and Ramsar sites within 10km of the site and no other SSSIs within 2km of the site. These areas are defined as the 'study area' for the purposes of this report and are based on the likely Zone of Influence (ZOI) for the Proposed Development (based in turn on the anticipated emissions associated with the development and their likely extent).
- 6.5.3 Four non-statutory Local Wildlife Sites (LWS) were also identified in the study area.
- 6.5.4 A Phase 1 Habitat survey including the area of the Main OCGT Power Station Site was undertaken by an AECOM in September 2017 and all habitats mapped in accordance with the standard survey method (Handbook for phase 1 habitat survey Joint Nature Conservation Committee (JNCC), Ref 6-19).
- 6.5.5 This survey identified that the habitat assemblage within the Main OCGT Power Station Site is considered to represent an example of the Open Mosaic Habitats on Previously Developed Land (OMH) priority habitat type. This habitat has developed through natural colonisation of a previously disturbed area, which it is understood was used for the storage of material cleared from the area north of this area during construction of the adjacent car park. Consequently the habitat is undulating with vegetated mounds of rubble/ spoil.
- 6.5.6 Five ponds are present within the Site boundary, including three inundated archaeological trial trenches and two small areas of apparently permanent standing water that are dominated by emergent swamp vegetation. All five suitable ponds within the Study Area were sampled for eDNA in April 2018; none returned a positive result for great crested newt (GCN) eDNA.
- 6.5.7 A single waterbody was identified within 250m of the Site boundary; a square water storage lagoon, which is linked to the process facility of the LOR (it is a settling pond for contaminated run-off), and as such is contaminated and thus unsuitable for GCN. This pond was therefore scoped out of further surveys for GCN and was not subject to eDNA sampling.
- 6.5.8 Further ecological survey work is planned for other areas of the Site (pipeline corridors and laydown areas) during 2018. These are summarised in Table 4 below.

Scope of the Assessment

- 6.5.9 Potential impacts on ecological receptors will be assessed using the Chartered Institute for Ecology and Environmental Management (CIEEM) Ecological Impact Assessment Guidelines

(2016) (Ref 6-20). Any likely significant adverse effects will be mitigated or compensated for and a number of ecological enhancements will also be considered where appropriate, in accordance with relevant planning policy. Following the implementation of mitigation and compensation, any residual effects on ecological receptors will be identified.

6.5.10 The following potential impacts may be associated with the Proposed Development:

- Permanent loss of habitats within the Site during construction;
- Disturbance of ecological receptors (including noise, dust and light impacts) in the vicinity of the Site during construction, operation and decommissioning;
- Impacts on aquatic habitats and water quality due to construction works; and
- Air quality impacts on ecological receptors in the zone of influence of the proposed development during operation.

6.5.11 Each of the specialist surveys will be reported in a separate document to be incorporated as a technical appendix to the Ecology Chapter of the ES.

Table 4. Further Surveys to be undertaken in 2018

Ecology Feature	Rationale	Method	Timing
Botanical survey	Open mosaic habitat on Site has the potential to be of high value, and requires evaluation against LWS selection criteria to inform ecological impact assessment.	Botanical survey to collect detailed species list for analysis against LWS selection criteria	June 2018
Reptiles	Open mosaic habitat on Site provides suitable basking, refuge and hibernation sites for reptiles.	Presence/ absence survey: 7 x surveys using artificial refuges at a minimum density of 10 per hectare of suitable habitat. Visual transect surveys within the new pipeline route and AGI location, Potential Construction Laydown & Access Area	Ongoing - September 2018
Breeding birds	Open mosaic habitat and wetland areas provide nesting opportunities for a range of breeding birds including ground nesting species.	5 x surveys to identify breeding species and map territories within the OCGT Site	April – June 2018
Terrestrial invertebrates	Open mosaic habitat may support notable species or assemblages of terrestrial invertebrates	Three surveys to be undertaken within the OCGT Site.	May-July 2018
Preliminary Ecological Appraisal (PEA) of New Pipeline routes, AGI Site, Potential Laydown areas and access areas	Establish baseline conditions and evaluate the importance of any ecological features in part of the site that was not included in the initial PEA which was undertaken prior to the recent design change relating to the pipeline routes to the east / west & south of the Site.	Survey to be undertaken in accordance with CIEEM (2013) guidelines for preliminary ecological appraisal	June 2018

6.5.12 Further surveys for the following species have been scoped out and these ecology features will also be scoped out of the ecological impact assessment. These features are only considered likely to be affected where they are present on the site rather than the wider study area:

- Wintering birds: Based on the habitat and topographical context of the Site, it is considered highly unlikely that the site would have a specific value for passage and wintering birds associated with the Humber Estuary SPA/ Ramsar. This was confirmed by the wintering bird surveys carried out on the Site in 2017 (Catley, 2017). The only waterfowl species that were recorded were snipe (*Gallinago gallinago*) and woodcock (*Scolopax rusticola*), which do not form part of the SPA/ Ramsar assemblage. Although the wintering bird surveys were only undertaken in January, February and March 2017 (and therefore missed the late autumn and early winter periods) when considered alongside the unsuitability of the habitat for SPA/ Ramsar species, the results are considered to be sufficiently robust to scope out wintering birds as an ecology feature requiring further survey and impact assessment;
- Bats (roosting): No potential roosting habitat is present within the Site boundary;
- Bats (foraging and commuting): Habitats within the Site are considered to represent sub-optimal habitat for foraging bats, due to its close proximity to the existing VPI CHP plant and the expected high levels of nocturnal light emissions from surrounding industrial developments that may deter foraging bats; and
- Water vole (*Arvicola amphibius*): This species is known to be present in the wider local area through desk study records and there are a number of drains adjacent to the Site that may provide suitable habitat. However, it is unlikely that any drains will be directly or indirectly affected by the Proposed Development, and therefore there is considered to be no requirement for further survey for this species. If impacts on drains (either direct or indirect) are predicted as the design/ layout of proposed development evolves, surveys for this species would be undertaken where necessary.

Habitats Regulations Assessment

- 6.5.13 Due to the proximity of the proposed development to the Humber Estuary SAC/ SPA/ Ramsar, a signposting report to inform Habitat Regulations Assessment (HRA) screening for Likely Significant Effects (LSE) on the Humber Estuary Natura 2000 site will be presented as a technical appendix to the Ecology Chapter of the ES.
- 6.5.14 It is not considered that the land within the Site boundary represents ‘functionally linked’ habitat supporting the passage and wintering bird interest of the Humber Estuary SPA/ Ramsar, because the habitats are unsuitable for foraging and roosting waterbirds. This is because waterbirds generally prefer flat open vistas and short vegetation (where their sight-lines are unrestricted in terms of predator detection) and the undulating topography and stands of tall ruderal vegetation at the Power Plant Area are likely to deter waterfowl from using the site for foraging and roosting. The results of the wintering bird survey carried out within the Site by Catley (2017) support this conclusion, because no SPA/ Ramsar species were recorded.
- 6.5.15 Potential indirect effects on the Humber Estuary SPA/ SAC/ Ramsar arising from noise, hydrology, water quality and air quality would be subject to LSE screening and any likely significant environmental effects assessed with the ES.

6.6 Landscape and Visual Amenity

Baseline Conditions

- 6.6.1 The Site is not located within or adjacent to any national or regional designations for landscape protection (e.g. Area of Outstanding Natural Beauty (AONB) or Green Belt land). The Site is located with National Character Area (NCA) 41: the Humber Estuary (Ref 6-22), which is focussed on the expanse of the Humber Estuary and associated low-lying land. There are no Public Rights of Way (PRoW) across the Site or immediately adjacent to it.

Scope of the Assessment

- 6.6.2 The following potential impacts may be associated with the Proposed Development:
- Temporary changes to landscape character and views from sensitive receptors in the vicinity of the Site during construction and decommissioning; and
 - Permanent changes to landscape character and views from sensitive receptors in the vicinity of the Site during operation.
- 6.6.3 The proposed method of landscape and visual impact assessment has been devised to address the specific impacts likely to result from a development of this scale and nature. The methodology draws upon the following established best practice guidance:
- Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (Ref 6-23);
 - An Approach to Landscape Character Assessment (Ref 6-24);
 - Visual representation of development proposals Technical Guidance Note 02/17 (Ref 6-25); and
 - Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and visual impact assessment (Ref 6-26).
- 6.6.4 The EIA process requires that a clear distinction is drawn between landscape and visual impacts, as follows:
- Landscape impacts relate to the degree of change to physical characteristics or components of the landscape, which together form the character of that landscape, e.g. landform, vegetation and buildings; and
 - Visual impacts relate to the degree of change to an individual receptor's view of that landscape, e.g. local residents, users of public footpaths or motorists passing through the area.
- 6.6.5 A detailed study of the existing landscape components, character and views of the will be undertaken in consideration of the following:
- Site context;
 - Topography;
 - Vegetation, including green infrastructure;
 - Roads, public rights of way and access;

- Settlement and land-use;
- Landscape character; and
- Representative views.

6.6.6 This will be supported by and photographs as appropriate. The planning context with respect to landscape character and visual amenity will also be assessed, taking into account relevant European, national, regional and local planning policies. The baseline study will form the basis of the assessment of the predicted impacts of the Proposed Development.

6.6.7 Representative views will be identified through the production of a ZTV assessment that will be undertaken based on the largest structures within the Proposed Development, i.e., the stack(s). The ZTV will be generated using a bare ground Digital Terrain Model (DTM) and be validated through field work. The following criteria will be used to determine the selection of representative views which form the basis of the visual assessment:

- Receptor function/activity;
- Distance from the Site;
- Topography and elevation;
- Degree and period of exposure;
- Designation of the viewing place; and
- Distribution of receptors.

6.6.8 From the initial site visit and planning policy context review, and based on a stack height of up to 35-45m, a 5km radius study area is proposed for the visual impact assessment of the Proposed Development. Given the existing landscape character of the Site context is dominated by large scale industrial sites, a 2 km study area is proposed for the landscape character assessment. It is not considered that there is a potential for any significant landscape or visual impacts beyond these areas.

6.6.9 Up to six accurate Visual Representations of the Proposed Development for agreed representative views (visual receptors) will be produced in line with current guidance. The location of representative views and photomontages will be agreed in consultation with North Lincolnshire Council (NLC) and neighbouring authorities as appropriate.

6.6.10 Where the assessment indicates the need for mitigation as a result of significant effects on landscape character or visual amenity, these will be outlined within the ES that forms part of the planning application. A detailed landscaping strategy including green infrastructure will be prepared in liaison with NLC as a requirement of a DCO.

6.7 **Ground Conditions and Hydrogeology**

Baseline Conditions

6.7.1 A desktop Phase 1 Environmental Site Assessment (ESA) and an intrusive Phase 2 ground investigation covering the OCGT Site and the Laydown & Access area to the north was undertaken in April 2018. The investigation comprised six deep boreholes into bedrock, eight window samples to a depth of approximately 5m, ten trial pits, and three trial trenches. Soil samples were collected and submitted for chemical and geotechnical analysis. The intrusive

Phase 2 investigation did not cover the Potential Construction Laydown areas, New (or existing) Pipeline Routes, AGI site or & Access Area.

- 6.7.2 The Phase 1 ESA indicated that the Main OCGT Power Station Site is underlain by Devensian aged glacial till, overlying Upper Cretaceous aged chalk of the Burnham Chalk Formation and reflected the geology encountered during the Phase 2 ground investigation.
- 6.7.3 During the Phase 2 ground investigation, Made Ground was encountered at two raised 'stockpiles' close to the southern boundary of the OCGT Site. The stockpile furthest west comprised gravel of chalk, sandstone, brick and concrete, while the stockpile further east comprised gravels of flint and sandstone.
- 6.7.4 Superficial deposits were encountered across the site and comprised glacial deposits of glacial till and occasional horizons of glacial sands and gravels.

Scope of the Assessment

- 6.7.5 The following potential impacts may be associated with the Proposed Development:
- Disturbance of contaminated soils and contamination of perched groundwater and creation of new pathways to sensitive receptors (including construction workers and controlled waters) during construction;
 - Pollution of soils and controlled waters within or near the Site during construction and decommissioning, for example due to the spillage of polluting materials (if an appropriate Environmental Management Plan is not adhered to); and
 - Pollution of soils and controlled waters within or near the Site during operation, for example due to the spillage of polluting materials (if materials are not appropriately stored in accordance with an appropriate Environmental Permit, Operational Environmental Management Plan and/or an appropriate drainage system is not implemented and maintained).
- 6.7.6 A desk based assessment (Phase 1) will be extended to include previously un-investigated parts of the Site to identify potential contaminative previous uses. This desk based assessment will identify the potential for land contamination and potential pathways to sensitive receptors. The desk based assessment will consider the potential for contaminants associated with current and historic land use in and around the Site to be present within the footprint of the Proposed Development.
- 6.7.7 The results of the desk based assessment and conceptual site model will be used to assess data gaps and uncertainties and, if required for the basis of additional site investigation. It is anticipated that the requirements for further intrusive investigation will be discussed and agreed in advance with the Environment Agency and NLC.
- 6.7.8 An assessment of potential impacts on existing ground conditions will be undertaken as part of the EIA, including the potential for the Proposed Development to result in land contamination, as defined in the Environment Act 1995 Part 2A (Ref 3-2). Consideration will also be given to potential impacts associated with the construction and operation of the Proposed Development and how these will be prevented or minimised.

6.7.9 Based on the assessment of the baseline and the identification of any potential impacts, the ES will propose appropriate mitigation measures. These may include further intrusive investigation to address residual data gaps or better delineate identified contamination hotspots or plumes, quantitative risk assessment, remediation and validation. It will also propose possible mitigation measures to be employed by contractors, should any previously unidentified contamination be encountered during the construction phase.

6.8 Surface Water, Flood Risk and Drainage

Baseline Conditions

6.8.1 The area surrounding the Site is drained via a network of small watercourses and land drainage ditches that convey surface water from the surrounding greenfield areas located between the Site and the Humber Estuary. A number of artificial waterbodies associated with LOR are also present.

6.8.2 The Humber Estuary is designated under the Nitrates Directive, Bathing Water Directive, Conservation of Wild Birds Directive, Habitats and Species Directive and the Urban Wastewater Treatment Directive. The Humber Estuary also has ecological and chemical classification under the Water Framework Directive (WFD, Ref 6-27)).

6.8.3 The smaller land drains and North East Lindsey IDB drains, whilst shown on the Digital Rivers Network Map, do not have ecological and chemical classification under the WFD.

6.8.4 The site is not located within an area defined as Functional Floodplain (Flood Zone 3b) but the proposed OCGT Site is shown on Environment Agency maps to be areas classified as having a 'high risk' of flooding from fluvial or tidal sources.

6.8.5 The Site does benefit from tidal flood defences along the entire south bank of the Humber Estuary and although the Site is shown as not benefitting from flood defences on the Environment Agency's flood maps, information provided by the Environment Agency (through the EIA process associated with VPI Energy Park 'A') indicate the Site is located in area that benefits from flood defences offering a standard of protection up to, and including, a 0.5% (1 in 200 year) storm event, based on the Still Water Tidal Water Levels.

Scope of the Assessment

6.8.6 The following potential impacts may be associated with the construction and decommissioning of the Proposed Development:

- Increased sediment supply to watercourses through earthworks and erosion of exposed soils by runoff, potentially impacting water quality and geomorphology of water bodies;
- Potential supply of construction material (e.g. concrete) to surface waters through accidental spillage or leakage of fuel oils and lubricants from construction works and vehicles, with impacts on surface water quality;
- Alteration in fluvial and overland flow paths, and potential increase in flood risk, as a result of storing construction materials in the floodplain;
- Increased risk of blockage of drains as a result of increased material (sands, gravels etc.) transported in runoff from site; and

- Increase in flood risk (fluvial, surface water and drainage infrastructure) due to changes to the rate and volume of surface water runoff entering the identified watercourses due to earthworks and changes in land use.

6.8.7 The following potential impacts may be associated with the operation of the Proposed Development:

- Potential operational pollution of surface watercourses from accidental spillages;
- Increased risk of fluvial flooding to the development and surrounding area due to loss of floodplain storage;
- Increased risk of flooding from fluvial flooding to the development and surrounding area over its lifetime due to climate change effects (increasing peak river flows);
- Increase in flood risk (fluvial, surface water and drainage infrastructure) due to an increase in surface water runoff from the development;
- Increase in risk of sewer flooding due to surface water runoff from the development; and
- Increased risk of groundwater flooding (particularly to any below ground development) as a result of high water table and/ or groundwater recharge.

6.8.8 A Flood Risk Assessment (FRA) is required in accordance with the NPPF (Ref. 5-3) and NPS EN-1 (Ref. 5-2) due to the size (over 1ha) and location of the Proposed Development (in Flood Zone 3). The FRA will consider flood risk from all sources to the Proposed Development as well as the potential for the Proposed Development to increase flood risk off site. This will inform the design of the Proposed Development (including finished ground and floor levels) as well as the EIA.

6.8.9 The EIA will also consider the potential for impacts on surface watercourses and waterbodies in proximity to the Site, including potential impacts on the River Humber.

6.8.10 A surface water management strategy is required in accordance with NLC local policy, (NLC are the Lead Local Flood Authority (LLFA) for the area) and the North East Lindsey IDB, where required. The strategy would outline how surface water runoff from the developed site will be managed to maintain pre-development runoff rates promoting the use of Sustainable Urban Drainage Systems (SUDS), where Site conditions allow.

6.9 Cultural Heritage

Baseline Conditions

6.9.1 There are no statutorily designated world heritage sites, or non-statutory battlefield sites or registered parks and gardens within of the Site with the exception of one Registered Garden (Brocklesby Park) located approximately 5km south west of the Site.

6.9.2 Archaeological remains within 2km of the Site are limited with a single SM at approximately 2km; Manor Farm Moated Site (List Entry Number 1008044).

6.9.3 There are few listed buildings in close proximity to the Site. Notable buildings include the Grade I listed churches in North Killingholme and Immingham, the Grade II* listed Manor House, associated with the SM at Manor Farm and the Grade II listed Killingholme lighthouses located approximately 1.6km to the east of the site on the banks of the Humber River.

- 6.9.4 There are no Conservation Areas within 5km of the Site.
- 6.9.5 Non-designated heritage assets recorded within 1km of the Site relate to Iron Age and Romano-British enclosures in the immediate area which have been identified and evaluated through a series of investigations comprising geophysical surveys, field walking and evaluation trenching.
- 6.9.6 Within the Site boundary, immediately to the west of, and running roughly parallel with, Rosper Road, an Iron Age ditch extending over 400 metres was identified during evaluation excavations in advance of the construction of works associated with the Total oil refinery. It is believed that this feature, and other evidence of Iron Age settlement, may be associated with a contemporary settlement known from the excavations of the Immingham CHP plant to the south.
- 6.9.7 The position of the site on the edge of the deposits of glacial till and alluvial deposits means that there is good potential for the preservation of archaeological deposits and features.

Scope of the Assessment

- 6.9.8 The following potential impacts may be associated with the Proposed Development:
- Physical impacts and/or impacts on the setting of non-designated heritage assets, including historic landscape character areas, within the Site during construction; and
 - Impacts on the setting of designated and non-designated heritage assets, including historic landscape character areas, in the vicinity of the Site during construction and operation.
- 6.9.9 A study area of 1km from the Site boundary will be used to provide baseline information for the assessment. A wider study area will be used to identify assets which may have their setting affected. The study area for the assessment on setting will be limited to 3km. The setting assessment will be limited to assets which fall within the ZTV. Some assets beyond this distance may also be considered where elements of their setting extend closer to the Proposed Development.
- 6.9.10 The assessment will be carried out in line with the relevant national, regional and local planning policies with regard to archaeology and cultural heritage, and undertaken with reference to the following legislation, standards and guidance:
- Ancient Monuments and Archaeological Areas Act (1979, Ref 6-28);
 - Planning (Listed Buildings and Conservation Areas) Act (1990, Ref 6-29);
 - Chartered Institute for Archaeologists (CIfA): Standards and guidance for historic environment desk-based assessment (2017, Ref 6-30);
 - NPPF 4, Section 12: Conserving & Enhancing the Historic Environment (2012, Ref 5-3);

- Historic England: Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets² (2015, Ref 6-31); and
 - Saved policies of the North Lincolnshire Local Plan.
- 6.9.11 The assessment will define the settings of listed buildings and other heritage assets, and will describe how their settings contribute to their significance. Possible intervisibility of the settings with each other and the Proposed Development will be assessed using the ZTV in liaison with the Landscape and Visual Impact Assessment (LVIA) specialist to ensure that relevant viewpoints are considered.
- 6.9.12 Desk-based research will be undertaken as part of the EIA. Additional information will be gathered from the following sources as applicable:
- The National Heritage List England;
 - The North Lincolnshire Historic Environment Record;
 - The local County Record Office and/or local studies library;
 - Geotechnical data and other assessments as appropriate and available; and
 - An archaeological walkover survey to assess known sites and to determine the potential for previously unrecorded heritage sites.
- 6.9.13 Information collected from the sources will be used to describe the known archaeology and built heritage of the 3 km study area. The results of the desk-based research and the layout design will be discussed with the North Lincolnshire Historic Environment Team to agree any requirement for additional field evaluation, such as geophysical survey or evaluation excavation, prior to determination
- 6.9.14 Guidance to be used in the assessment includes:
- GPA2 (Ref 6-32)
 - GPA3 (Ref 6-31)– this advice note sets out a staged approach for assessing the impact of a proposed development on the heritage significance of assets, due to changes in their setting.
 - Planning Practice Guidance 18a: Conserving and enhancing the historic environment, Scoping and consultation (Ref 6-33).
- 6.9.15 The significance (heritage value) of a heritage asset is determined by professional judgement, guided but not limited to any designated status the asset may hold. The value of an asset is also judged upon a number of different factors including the special characteristics the assets might hold which can include evidential, historical, aesthetic, communal, archaeological, artistic and architectural values.

² GPA3 Has been revised and a new version is due to be formally adopted.

6.9.16 The significance of a place is defined by the sum of its heritage values. Taking these criteria into account, each identified heritage asset can be assigned a level of significance (heritage value) in accordance with a three-point scale as set in Table 5 below.

Table 5. Criteria for determining the significance (heritage value) of heritage assets

Significance (Heritage Value)	Typical descriptors
High	Assets of inscribed international importance, such as World Heritage Sites, Grade I and II* listed buildings, Grade I and II* registered historic parks and gardens, Registered battlefields, Scheduled monuments, Non-designated archaeological assets of schedulable quality and importance.
Medium	Grade II listed buildings, Grade II listed registered historic parks and gardens, Conservation Areas, Locally listed buildings included within a conservation area Non-designated heritage assets of a regional resource value
Low	Non-designated heritage assets of a local resource value as identified through consultation, Locally listed buildings, Non-designated heritage assets whose heritage values are compromised by poor preservation or damaged so that too little remains to justify inclusion into a higher grade

6.9.17 Having established the significance of the heritage assets, the assessment will then consider the degree of impact on heritage assets as a result of development. Impacts may arise during construction or operation and can be temporary or permanent. Impacts can occur to the physical fabric of the asset or affect its setting.

6.9.18 When professional judgement is considered, some sites may not fit into the specified category in this table. Each heritage asset is assessed on an individual basis and takes into account regional variations and individual qualities of sites.

6.9.19 The level and degree of impact (impact rating) is assigned with reference to a four-point scale as set out in Table 6. In respect of cultural heritage an assessment of the level and degree of impact is made in consideration of any scheme design mitigation (embedded mitigation).

Table 6: Criteria for determining the magnitude of impact on heritage assets

Magnitude of Impact	Description of Impact
High	Change such that the significance of the asset is totally altered or destroyed. Comprehensive change to setting affecting significance, resulting in a serious loss in our ability to understand and appreciate the asset.
Medium	Change such that the significance of the asset is affected. Noticeably different change to setting affecting significance, resulting in erosion in our ability to understand and appreciate the asset.

Magnitude of Impact	Description of Impact
Low	Change such that the significance of the asset is slightly affected. Slight change to setting affecting significance resulting in a change in our ability to understand and appreciate the asset.
Minimal	Changes to the asset that hardly affect significance. Minimal change to the setting of an asset that have little effect on significance resulting in no real change in our ability to understand and appreciate the asset

6.9.20 An assessment of the level of significance of effect, having taken into consideration any embedded mitigation, is determined by cross-referencing between the significance (heritage value) of the asset (Table 5) and the magnitude of impact (Table 6). The resultant level of significant effect (Table 7) can be negligible, adverse or beneficial. Effects of major or moderate significance are considered to be significant.

Table 7: Criteria for determining the significance of effect

Significance (heritage value)	Magnitude of impact			
	High	Medium	Low	Minimal
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Negligible

6.9.21 The ES will report on the significance of effect in accordance with the EIA Regulations. Effects of major or moderated significance are considered to be significant.

6.9.22 An assessment of the predicted significance of effect is made both prior to the implementation of mitigation and after the implementation of mitigation to identify residual effects. This first highlights where mitigation may be appropriate and then demonstrates the effectiveness of mitigation and provides the framework for the assessment of significance which takes mitigation measures into consideration.

6.9.23 Mitigation will consider the predicted impacts of the Proposed Development and aim to avoid adverse effects on archaeology and heritage assets within the study area. In the case of archaeological remains, mitigation will aim to avoid undisturbed archaeological remains and preserve them in situ. Where this is not possible, preservation by record will be proposed as mitigation.

6.9.24 Mitigation measures could include early design intervention to avoid physical impacts on known heritage assets. If it is not possible to avoid heritage assets, mitigation may include detailed landscape/topographic surveys, archaeological excavation of any features being destroyed and archaeological monitoring/watching brief.

6.9.25 The assessment will determine whether there would be any residual effects with respect to cultural heritage, either beneficial or adverse, following the application of any mitigation measures that are identified as being required for the Proposed Development.

6.9.26 Consultation will be undertaken with the North Lincolnshire Archaeological Officer and the Built Environment Officer and the local Heritage England Inspector of Ancient Monuments to discuss the heritage assets potentially affected by the Proposed Development, to establish a plan for any further investigation and to formulate outline mitigation measures that may be required.

6.10 Socio-Economics

Baseline Conditions

6.10.1 The Proposed Development falls in the Ferry Ward of North Lincolnshire.

6.10.2 The study area is within a rural environment with a low population density (0.8 persons per hectare compared to 2 persons per hectare average for North Lincolnshire (Ref 6-34).

Scope of Assessment

6.10.3 The Proposed Development is likely to have a beneficial effect on employment during the construction phase. There will also be limited employment opportunities associated with the operation of the Proposed Development (associated with operating and maintenance works).

6.10.4 A policy review will be undertaken including relevant local, sub-regional and national policies around economic development and planning in a socio-economic context to understand the fit of the development proposals with existing policy and identify, where available, relevant service provision standards. This will provide an interpretation of where the Proposed Development would meet local policy requirements

6.10.5 In order to provide an accurate assessment of the potential impacts of the Proposed Development, a detailed baseline of the social and economic profile of the local area, including local urban centres, compared to the regional and national context, will be established based on the relevant impact and benchmark areas identified.

6.10.6 The baseline will be developed using appropriate data sources including ONS 2011 Census, ONS Annual Population Survey, ONS Mid-year Population Estimates, ONS Labour Market Statistics, Business Register and Employment Survey data, Annual Survey of Hours and Earnings, and current provision and position in relation to the relevant impact areas (e.g. employment, demography, provision of education, health, community services and open space).

6.10.7 During the collection of baseline data, consultation with local and sub-regional stakeholders may be required to gain the most up to date and accurate information.

6.10.8 The impact assessment will identify the additional demand created in the economy and for social infrastructure resulting from the Proposed Development both during the construction and operational phases, including any mitigation measures required as a result of residual impacts. Information on construction phase expenditure and duration and construction and operation phase workforce will be used to inform the assessment.

6.10.9 The impact assessment will consider both construction and operational phases and provide an assessment of both gross and net additional impacts resulting from the Proposed Development. The assessment will draw on the latest guidance on employment densities,

additionality and impact assessment to include Homes England, Treasury Green Book and Department for Business, Innovation and Skills (BIS) published guides. Where possible the impacts of the socio-economic assessment will be appraised against relevant national standards and guidance. Where no standards exist, professional experience and judgement will be applied and justified.

6.11 Sustainability and Climate Change

Baseline Conditions

6.11.1 National, regional and local policy guidance promotes sustainability principles, particularly with regard to the reuse of land and buildings, air quality and land contamination issues, energy conservation, materials and water usage.

Sustainability Assessment: Scope of the Assessment

6.11.2 The ES will incorporate an assessment of the design against established sustainability criteria to take into account the following:

- Land, materials and natural resource use;
- Energy consumption and energy efficiency;
- Waste minimisation and implementation of the waste hierarchy, including a waste management plan covering the construction phase of the Proposed Development; and
- Materials specification and usage in relation to CO₂ emissions and ozone depletion.

6.11.3 The carbon emissions/carbon footprint from the operational power plant will be assessed in a standalone Climate Change Impact Report, considering proposed plant efficiency and performance against UK data including the average carbon emissions associated with the current electricity fuel mix in the UK.

Climate Assessment: Scope of the Assessment

6.11.4 A number of factors will be considered in the climate assessment for the Project Development:

- Impact on climate change as a result of Greenhouse Gas (GHG) emissions arising from the operation of the power station) (termed a Lifecycle greenhouse gas impact assessment);
- The resilience of the Scheme to climate impacts (climate resilience assessment);
- How the scheme may impact the overall resilience of the surrounding environment against the predicted impacts of climate (in-combination climate impacts assessment).

6.11.5 Further information on these three aspects is presented below.

The GHG Assessment

6.11.6 The Proposed Development may have a potential impact on climate change associated with the emission of greenhouse gas emissions at various stages in the project lifecycle including

- Emission of greenhouse gases from the stack(s) during operation;

- Emission of greenhouse gas from vehicles associated with construction, commissioning, operation and decommissioning; and
- Embodied greenhouse gases associated with the materials used in the construction of the Proposed Development

6.11.7 The two main stages of the project which are expected to have potentially significant emissions of greenhouse gases are the construction and operational phases. In relation to greenhouse gas emissions, the ES will quantify the greenhouse gas emissions budget predicted to arise as a consequence of the Proposed Development, using forecast operational scenario data, and taking into account the technologies under consideration.

6.11.8 For greenhouse gas emissions, emerging guidance from the Institute of Environmental Management and Assessment (IEMA) states that:

“...in the absence of any significance criteria or a defined threshold, it might be considered that all GHG emissions are significant and an EIA should ensure the project addresses their occurrence by taking mitigating action.”

6.11.9 As such, it is proposed to scope in greenhouse gas emissions and provide a quantitative assessment of the scale of GHG emissions associated with the construction and operational stages of the scheme. This will enable key mitigation measures to be considered and, where necessary, incorporated in the ongoing design. As part of this consideration, the expected plant efficiency will be benchmarked against current comparable UK plants. The total calculated GHG emissions footprint will also be compared against the UK’s overall national GHG inventory and more particularly the current carbon budget that the UK has adopted.

The Climate Resilience Assessment

6.11.10 The climate resilience assessment will identify how the project design has considered and reflected the key climate change projections for the project lifetime. Based on an initial review of the climate projections for the region, this will focus on extreme weather and flooding issues as the key issues of concern. Commentary from this assessment will be included in the ES as part of the project description and options assessment.

6.12 Cumulative and In-combination Effects

6.12.1 An assessment of potentially significant cumulative effects with other proposed developments in the vicinity of the Proposed Development will be undertaken for each of the technical topics, and reported in the ES.

6.12.2 Other known developments in the vicinity of the Proposed Development are shown on Figure 6.

VPI Energy Park ‘A’ Planning Application

6.12.3 To the west of the main power station site is a parcel of land which is currently subject to an application for planning permission to NLC under the TCPA for a gas fired power station of up to 49.9MW (identified as VPI Energy Park ‘A’, planning reference PA/2018/918). This application is being sought by an affiliate to the Applicant as a related but separate development to the Proposed Development.

- 6.12.4 The two developments are not in competition, i.e. they are intended to meet different aspects of electricity demand in the UK; neither are they in any way dependent upon each other, i.e. neither is reliant on any aspect of the other to proceed.
- 6.12.5 The TCPA application interacts with the Proposed Development in the following ways:
- The gas pipeline corridor for this Proposed Development includes the southern part of the power plant site proposed for the TCPA application;
 - A new temporary construction access is proposed for the TCPA application which runs inside the northern boundary of the main power station site;
 - Potential crossovers with gas, electricity and data connections between the two power stations and the existing VPI CHP plant; and
 - Utilisation of the similar site access routes for construction purposes.
- 6.12.6 Most of these issues will be dealt with by way of construction scheduling, i.e. construction of the TCPA plant is anticipated to be complete in advance of the commencement of construction of the Proposed Development.
- 6.12.7 Any potential cumulative issue, e.g. emissions to air and traffic will be assessed through a cumulative assessment presented in the ES for the Proposed Development.

Other Potentially Cumulative Developments

- 6.12.8 Based on the assessment performed for the above application, Figure 8 presents other known planned developments in the vicinity of the Proposed Development (for which a planning application has been submitted). These are as follows:
- Application for a 470MW_e power station (EN10038): A development carrying a current DCO located approximately 2km from the Proposed Development;
 - 14 gas reciprocating engine generators and ancillary equipment. (PA/2016/1240): A consented development located approximated 1.5km from the Proposed Development;
 - A standing reserve power plant comprising 12 gas reciprocating engines (DM/0802/16/FUL): A consented development located approximated 5km from the Proposed Development; and
 - North Beck Energy Recovery Facility (DM/0026/18/FUL). An application pending decision (as of May 2018) with a planned operational date of 2022.
- 6.12.9 Information on other developments that have the potential for cumulative effects with the Proposed Development will be identified in consultation with the relevant local planning authorities.

6.13 Combined Head and Power (CHP) Assessment

- 6.13.1 Although not formally part of the EIA, it is a requirement of the NPS that applicants for all new power stations explore and develop feasible CHP opportunities. This is in order to maximise the use of waste heat and in turn the thermal efficiency of the proposed combustion plant.

- 6.13.2 A CHP investigation will be undertaken and a statement included as part of the application for development consent, in accordance with the EA CHP Ready Guidance for Combustion and Energy from Waste Power Plant (Ref 5-35).
- 6.13.3 The CHP feasibility review will consider the heat availability from the Proposed Development, recognising that the plant is only expected to run for up to 1,500 hours per year, which may affect the economic viability of it supporting any CHP provision.

7.0 NON-SIGNIFICANT EIA ISSUES

7.1 Introduction

- 7.1.1 The aim of the Scoping stage is to focus the EIA on those environmental aspects that may be significantly affected by the Proposed Development. In so doing, the significance of impacts associated with each environmental aspect becomes more clearly defined, sometimes resulting in certain aspects being considered ‘non-significant’. The following section provides a summary of those issues considered during the preparation of this Scoping Report, which are not considered likely to lead to significant environmental effects. It is proposed that these would therefore not be considered in the ES.
- 7.1.2 Table 8 below presents the aspects and matters, the Applicant proposes to scope out of the EIA. In all cases further detail is presented in the following paragraphs.

Table 8. Aspects and Matters Requested to be Scoped Out

Aspect	Reason
Waste Management	Minor arisings only
Electronic Interference	New structures not anticipated to exceed size and massing of existing neighbouring structures
Aviation	No impacts anticipated
Accidental Events /Health and Safety	Dealt with in individual chapters and through the Environmental Permit

7.2 Waste Management

- 7.2.1 Waste arisings from the existing VPI CHP plant is managed in accordance with the Environmental Management System Procedure for the Management of Controlled Waste (Hazardous & Non-Hazardous).
- 7.2.2 Due to the size of the Proposed Development, waste arisings are anticipated to be very minor in nature from the operational power plant and would be managed by adopting the procedures already in place. Construction wastes are not expected to be significant and will be managed through a Site Waste Management Plan. Any spoil arising from site clearance and preparation works is envisaged to be retained on site for beneficial use. Therefore, significant effects from waste are not anticipated.

7.3 Electronic Interference

- 7.3.1 The proposed maximum building heights and expected temporary construction cranes would be no higher than the existing cooling towers and stacks associated with existing VPI CHP plant. Therefore an assessment of the Proposed Development’s effect on electronic interference is not considered to be required.
- 7.3.2 Further to this, analogue television and radio signals have ceased to be transmitted and have been replaced by digital signals. As such, the Proposed Development’s potential to interfere

with television, radio (both analogue and digital) and mobile phone reception is considered negligible. It is proposed that Electronic Interference is scoped out of the EIA.

7.4 Aviation

7.4.1 The Civil Aviation Association (CAA) has a general interest in charting all known structures of 91.4m (300 feet) or more above ground level.

7.4.2 Given the Site's distance from the nearest airfield (Humberside airport, approximately 9.5km to the southwest) and as none of the proposed buildings or structures would be 91.4m or more above ground level (with the tallest structures envisaged to be roughly half that height), an assessment of the potential impacts of the Proposed Development on aviation is not considered to be required. It is therefore proposed that Aviation is scoped out of the EIA.

7.4.3 The CAA will however be consulted on the Proposed Development to review any requirements for aviation lighting on the stack(s) and enable the Proposed Development to be charted in future if required.

7.5 Accidental Events/Health & Safety

7.5.1 The description of the Proposed Development in the ES will provide information to allow the key environmental issues identified to be adequately assessed. Accidental events such as the potential for fuel spillages, fires and abnormal air emissions, and how the risk of these events would be minimised, will be detailed in the relevant chapter of the ES.

7.5.2 Accidental events will be covered by a brief risk assessment in the ES, which will include reference to the Applicant's overarching principles of emergency management. The majority of emergency response plans and contingency measures will be dealt with in the Environmental Permit, which is regulated by the Environment Agency. It is therefore not proposed to include a standalone accidental events/health and safety chapter in the ES.

7.6 Carbon Capture Readiness

7.6.1 As the project falls below the threshold requiring an assessment of Carbon Capture Readiness (CCR), no such assessment is proposed.

8.0 ENVIRONMENTAL IMPACT ASSESSMENT SCOPE AND PROCESS

8.1 Proposed Scope of the EIA

8.1.1 Based on an evaluation of the baseline environmental information that exists for the Site and surrounding area and the potential environmental effects of the Proposed Development, it is proposed that the EIA will include the following technical disciplines:

- Planning Policy Context;
- Air Quality;
- Traffic and Transport;
- Noise and Vibration;
- Ecology and Nature Conservation;
- Landscape and Visual Amenity;
- Ground Contamination and Hydrogeology;
- Flood Risk, Hydrology and Water Resources;
- Cultural Heritage;
- Socio-Economics; and
- Sustainability and Climate Change.

8.1.2 As outlined in Section 7, a number of assessments are not considered relevant to the EIA for this Proposed Development as no significant environmental effects are anticipated to occur. The term 'significant' is an important distinction because a development may cause minor impacts to occur which do not have significant environmental effects. As such, the following topics are proposed to be scoped out of the EIA:

- Waste management;
- Electronic interference;
- Aviation; and
- Accidental events.

8.2 EIA Methodology and Reporting

8.2.1 The ES will set out the process followed during the preparation of the EIA including the methods used for the collection of data and for the identification and assessment of impacts. Any assumptions made will be clearly identified.

8.2.2 The EIA process is designed to be capable of, and sensitive to, changes that occur as a result of changes to the plant design, including any mitigation measures that are incorporated during the EIA. This will be particularly important for the Proposed Development as the design and layout is still being refined, and minor changes are likely to be made following submission of this EIA Scoping Report.

8.2.3 The EIA is based on a number of related activities, as follows:

- Establishing existing baseline conditions;
- Consultation with statutory and non-statutory consultees throughout the development consent process;
- Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to EIA;
- Consideration of technical standards for the development of significance criteria;
- Review of secondary information, previous environmental studies and publicly-available information and databases;
- Physical surveys and monitoring;
- Desk-top studies;
- Computer modelling;
- Reference to current legislation and guidance; and
- Expert opinion.

8.2.4 Impacts will be considered on the basis of their magnitude, duration and reversibility. Cumulative and combined effects will also be considered where appropriate. Significance will be evaluated on the basis of the scale of the impact and the importance or sensitivity of the receptors, in accordance with standard assessment methodologies (major, moderate, minor and not significant).

8.2.5 Where likely significant environmental effects are identified in the assessment process, measures to mitigate these effects will be put forward in the form of recommendations to be undertaken as part of the project development.

8.3 **Proposed Structure of the Environmental Statement**

8.3.1 The ES will comprise the following set of documents:

- Non-Technical Summary (NTS): This document will provide a summary of the key issues and findings of the EIA in non-technical language.
- Volume 1: Environmental Statement: This will contain the full text of the EIA with the proposed chapter headings as follows:
 - Chapter 1: Introduction;
 - Chapter 2: Assessment Methodology;
 - Chapter 3: Description of the Site;
 - Chapter 4: The Proposed Development;
 - Chapter 5: Planning Policy Context;
 - Chapter 6: Air Quality;
 - Chapter 7: Traffic and Transport;
 - Chapter 8: Noise and Vibration

- Chapter 8: Ecology and Nature Conservation;
 - Chapter 9: Landscape and Visual Amenity;
 - Chapter 10: Ground Conditions and Hydrogeology;
 - Chapter 11: Flood Risk, Hydrogeology and Water Resources;
 - Chapter 12: Cultural Heritage
 - Chapter 13: Socio-Economics
 - Chapter 14: Sustainability and Climate Change
 - Chapter 15: Cumulative and Combined Effects; and
 - Chapter 16: Summary of Significant Residual Effects and Mitigation.
- Volume II: Figures: This will provide supporting figures of the environmental studies conducted during the EIA.
 - Volume III: Technical Appendices: These will provide supplementary details of the environmental studies conducted during the EIA including relevant data tables, figures and photographs. A table outlining the proposed mitigation measures and how they are to be secured will also be provided.

8.4 **Structure of Technical Chapters**

8.4.1 Chapters 6-13 will be structured based on the following sub-headings:

Introduction

8.4.2 The Introduction will describe the format of the assessment presented within the chapter.

Legislation and Planning Policy Context

8.4.3 The Legislation and Planning Policy Context section will provide an overview of the relevant legislation, planning policy and technical guidance relevant to the assessment.

Assessment Methodology and Significance Criteria

8.4.4 The assessment method will incorporate feedback from consultation that has been undertaken throughout all stages of the project. The ES will highlight key issues that have arisen from the scoping exercise that have been specifically addressed within the EIA.

8.4.5 The methods used in undertaking the technical study will be outlined with references to published standards (e.g. British Standards, Building Research Establishment), guidelines (e.g. Design Manual for Roads and Bridges and Institute of Environmental Management & Assessment guidelines) and relevant significance criteria.

8.4.6 The significance of effects before and after mitigation will be evaluated with reference to definitive standards, accepted criteria and legislation where available. Where it is not possible to quantify impacts, qualitative assessments will be carried out, based on available knowledge and professional judgment. Where uncertainty exists, this will be noted in the relevant technical assessment chapter.

- 8.4.7 Specific criteria for each technical assessment will be developed, giving due regard to the following:
- Extent and magnitude of the impact;
 - Impact duration (whether short, medium or long term);
 - Impact nature (whether direct or indirect, reversible or irreversible);
 - Whether the impact occurs in isolation, is cumulative or interactive;
 - Performance against environmental quality standards where relevant;
 - Sensitivity of the receptor; and
 - Compatibility with environmental policies and standards.
- 8.4.8 For issues where definitive quality standards do not exist, significance will be based on the:
- Local, district, regional or national scale or value of the resource affected;
 - Number of receptors affected;
 - Sensitivity of these receptors; and
 - Duration of the impact.
- 8.4.9 In order to provide a consistent approach to expressing the outcomes of the various studies undertaken as part of the EIA, and thereby enable comparison between effects upon different environmental components, the following terminology will be used throughout the ES to define effects:
- Adverse – detrimental or negative effect to an environmental resource or receptor; or
 - Beneficial – advantageous or positive effect to an environmental resource or receptor; and
 - Negligible – imperceptible effect to an environmental resource or receptor; or
 - Minor – slight, very short or highly localised effect of no significant consequence; or
 - Moderate – more than a slight, very short or localised effect (by extent, duration or magnitude) which may be considered significant; or
 - Major – considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards.
- 8.4.10 As indicated above, for the purpose of this EIA, moderate and major effects will be deemed ‘significant’. Where possible mitigation measures will be identified to reduce the residual effects to ‘not significant’.
- 8.4.11 Each of the technical chapters will provide the criteria, including sources and justifications, for quantifying the different levels of residual effect. Where possible, this has been based upon quantitative and accepted criteria (for example, the National Air Quality Strategy objectives or noise assessment guidelines), together with the use of value judgement and expert interpretation to establish to the scale of an effect.

Baseline Conditions

- 8.4.12 In order to assess the potential impacts and effects of the Proposed Development, it is necessary to determine the environmental conditions that currently exist on site and in the surrounding area, for comparison. These are known as the 'existing baseline conditions'. Baseline conditions are determined using the results of site surveys and investigations or desk based data searches, or a combination of these, as appropriate.
- 8.4.13 In order to compare future operations against the baseline that is likely to occur at the time of full operation, for most technical disciplines it will be necessary to establish future baseline conditions taking account of any planned or likely changes.

Development Design and Impact Avoidance

- 8.4.14 Measures that have been integrated into the Proposed Development in order to avoid or reduce adverse environmental effects will be described. Such measures may include refinement of the design and layout of the Proposed Development to avoid impacts on sensitive receptors, implementation of Construction and Operational Environmental Management Plans, and adherence of relevant legislation, guidance and best practice. The assessment of impacts and effects in the next section takes account of these measures already being in place.

Likely Impacts and Effects

- 8.4.15 This section will identify the likely impacts resulting from the Proposed Development. The magnitude of impacts are defined with reference to the relevant baseline conditions (existing or future, as appropriate), and effects are determined in accordance with the identified methodology.

Mitigation and Enhancement Measures

- 8.4.16 The Mitigation and Enhancement Measures section will describe the measures that will be implemented by the Applicant to reduce any significant adverse effects identified by the assessment and enhance beneficial effects during construction and operation of the Proposed Development.

Residual Effects and Conclusions

- 8.4.17 Effects of the Proposed Development remaining following the implementation of available mitigation measures are known as 'residual effects'. These will be discussed for each of the potential effects, and their significance level identified.

Cumulative and Combined Effects

- 8.4.18 In accordance with the EIA Regulations, consideration will also be given to the potential for cumulative impacts to arise. Other developments to be considered in the cumulative impact assessment will be agreed with the LPA.
- 8.4.19 Cumulative impacts are those that accrue over time and space from a number of development activities. The impact of the Proposed Development will be considered in conjunction with the potential impacts from other projects or activities which are both reasonably foreseeable in

terms of delivery (e.g. have planning consent) and are located within a realistic geographical scope where environmental impacts could act together to create a more significant overall effect.

- 8.4.20 Combined effects will also be assessed. The combination of predicted environmental impacts resulting from a single development on any one receptor that may collectively cause a greater effect (such as the combined effects of noise and air quality/ dust impacts during construction on local residents), are referred to as combined effects.

8.5 **Scoping and Consultation**

- 8.5.1 The process of consultation is critical to the development of a comprehensive and balanced ES. The views of statutory and non-statutory consultees serve to focus the environmental studies and to identify specific issues that require further investigation. Consultation is an ongoing process, which enables mitigation measures to be incorporated into the project design thereby limiting adverse effects and enhancing environmental benefits.
- 8.5.2 North Lincolnshire Council and North East Lincolnshire Council have been contacted prior to the submission of this Scoping Report.
- 8.5.3 Following the publication of this EIA Scoping Report, informal consultation on the Proposed Development will be undertaken in spring/summer 2017, using a range of methods, which includes a project website, will be maintained throughout the project to provide up-to-date information.
- 8.5.4 As required by Section 47 of the Planning Act 2008 (as amended) the Applicant is preparing a Statement of Community Consultation (SoCC) for publication in spring/summer 2017. The SoCC will outline how the Applicant intends to formally consult with the local community about the Proposed Development. The Applicant is required to first consult the relevant local authorities on the draft SoCC, who have a period of at least 28 days following receipt of the draft SoCC to do so, prior to its publication for inspection by the public.
- 8.5.5 Preliminary Environmental Information (PEI) will be provided for statutory consultation, which will take place around Q3 2017. The formal consultation will use a range of methods including a public exhibition, newsletter drop and ongoing use of the project website.
- 8.5.6 All responses received during consultation will be carefully considered and taken into account in the development of the project, in accordance with Section 49 of the Planning Act 2008. Details of any responses received during consultation and the account taken of those responses will be included in a Consultation Report, as required by Section 37 of the Planning Act 2008. This Consultation Report will be submitted as part of the application for development consent and will be available for public review at that point.
- 8.5.7 The Consultation Report will demonstrate how the Applicant has complied with the consultation requirements of the Planning Act 2008. It will be considered by PINS, both when determining whether to accept the application and in examining the application.

9.0 SUMMARY

9.1.1 This EIA Scoping Report has identified the potential for significant effects to arise from the construction and operation of the Proposed Development. The following technical specialist assessments are proposed:

- Air Quality;
- Traffic and Transport;
- Noise and Vibration;
- Ecology and Nature Conservation;
- Landscape and Visual Amenity;
- Ground Contamination and Hydrogeology;
- Flood Risk, Hydrology and Water Resources;
- Cultural Heritage;
- Socio-Economics; and
- Sustainability and Climate Change.

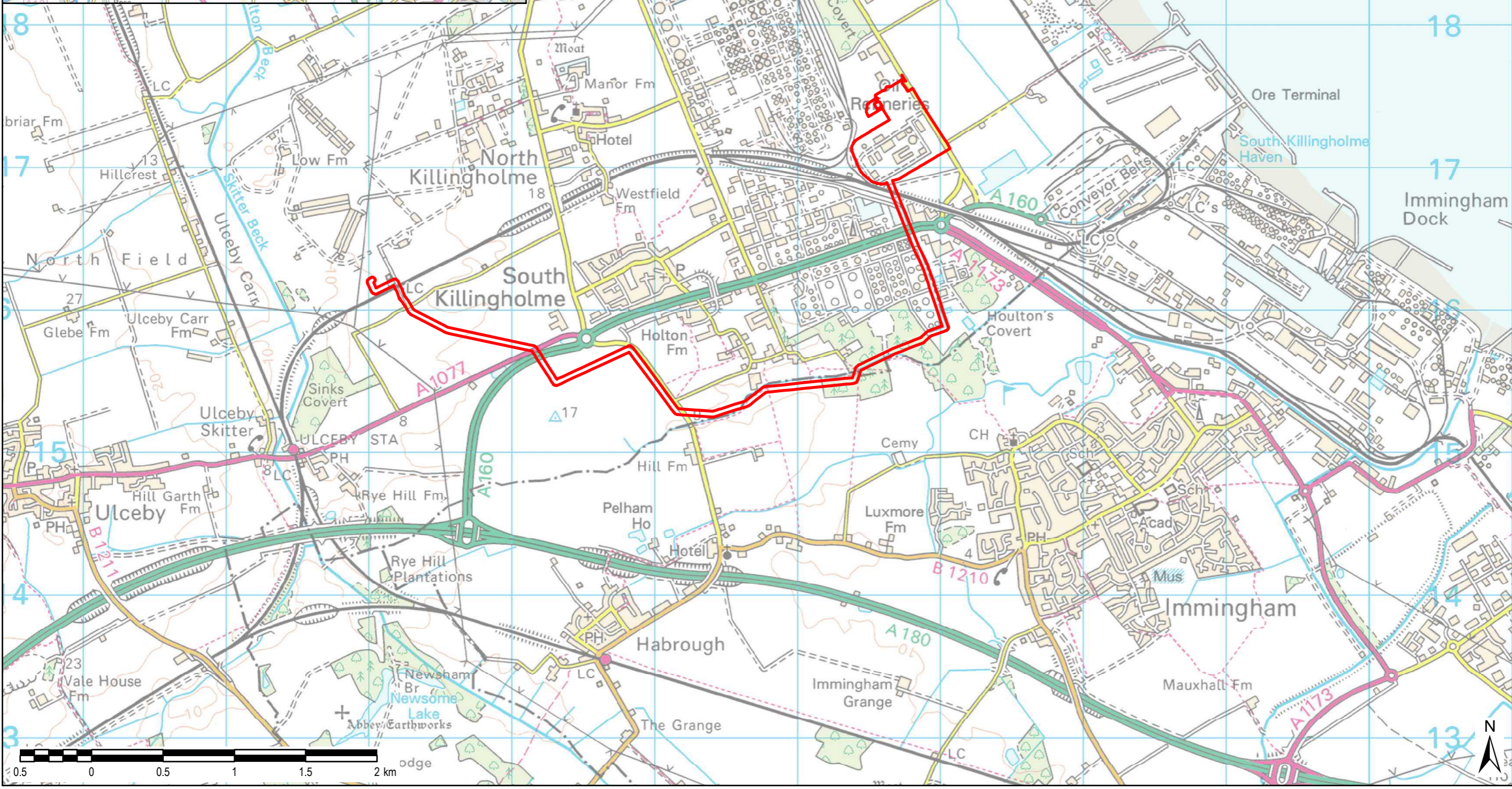
9.1.2 The detailed assessments for each of these topics will be undertaken in accordance with standard guidance and best practice and reported in the ES. Where significant effects are identified, mitigation measures will be described where possible to reduce the residual effects.

9.1.3 This EIA Scoping Report is submitted to PINS with a formal request for a Scoping Opinion in accordance with Regulation 8 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 as amended.

10.0 REFERENCES

- Ref 1-1 PINS (2017) Advice Note 7 Environmental Impact Assessment Screening, Scoping and Preliminary Information
- Ref 3-1 HM Government (1974) Control of Pollution Act
- Ref 3-2 HM Government (1995) Environment Act
- Ref 3-3 HM Government (2005) Hazardous Waste (England and Wales) Regulations
- Ref 5-1 Department of Energy & Climate Change (DECC) (2013) Electricity Market Reform (EMR) Delivery Plan
- Ref 5-2 Department of Energy and Climate Change (DECC) (2011) Overarching National Policy Statement for Energy (EN-1). London: The Stationery Office
- Ref 5-3 Department for Communities and Local Government (DCLG) (2012) The National Planning Policy Framework. DCLG
- Ref 5-4 Department of Trade and Industry (2007) Meeting the Energy Challenge: a White Paper on energy. DECC
- Ref 5-5 Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
- Ref 6-1 Environment Agency (2016) Air Emissions Risk Assessment for your Environmental Permit. Available from: <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit> [Accessed 25/05/18].
- Ref 6-2 Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) (2017) Land-Use Planning & Development Control: Planning For Air Quality.
- Ref 6-3 Highways Agency (2007) Design Manual for Roads and Bridges, Vol 11, S3, Part 1, HA 207/07 [Online] Available from: <http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/Section3/ha20707.pdf> [Accessed 25/05/18].
- Ref 6-4 Institute of Air Quality Management and Assessment Institute of Air Quality Management (2014) Guidance on the Assessment of Dust from Demolition and Construction.
- Ref 6-5 Department for Communities and Local Government (2014) Travel Plans, Transport Assessments and Statements, Planning Practice Guidance.
- Ref 6-6 Institute of Environmental Assessment (1993) Guidelines for the Environmental Assessment of Road Traffic.
- Ref 6-7 Department of Transport (1988) Calculation of Road Traffic Noise (CRTN)
- Ref 6-8 Department for Environment, Food & Rural Affairs (2010) Noise Policy Statement for England (NPSE)
- Ref 6-9 Ministry of Housing, Communities & Local Government (2014) Planning Practice Guidance for Noise [Online] available at: <https://www.gov.uk/guidance/noise--2> [accessed 25/05/18]
- Ref 6-10 British Standard (BS) 5228-1 2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites. Part 1: Noise
- Ref 6-11 British Standard (BS) 5228-2 2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites. Part 2: Vibration
- Ref 6-12 International Organisation for Standardisation (ISO) 9613-2: 1996 Attenuation of sound during propagation outdoors. Part 2: General method of calculation
- Ref 6-13 British Standard (BS) 4142: 2014 Methods for rating and assessing industrial and commercial sound.
- Ref 6-14 British Standard (BS) 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings
- Ref 6-15 World Health Organisation (WHO) (1999) Guidelines for Community Noise'
- Ref 6-16 World Health Organisation (WHO) (2009) Night Noise Guidelines for Europe

- Ref 6-17 British Standard (BS) 7385: 1993 Evaluation and measurement for vibration in buildings'
- Ref 6-18 British Standard (BS) 6472: 2008 Guide to evaluation of human exposure to vibration in buildings
- Ref 6-19 Joint Nature Conservation Committee (2010) Handbook for phase 1 habitat survey – a technique for environmental audit.
- Ref 6-20 Chartered Institute of Ecology and Environmental Management (CIEEM, 2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, second Edition.
- Ref 6-21 CIEEM, (2013) Guidelines for Preliminary Ecological Appraisal
- Ref 6-22 Natural England (2014) NCA Profile: 41 Humber Estuary (NE344)[Online] available at: <http://publications.naturalengland.org.uk/publication/2285747> [accessed 25/05/18]
- Ref 6-23 Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, Third Edition
- Ref 6-24 Natural England (2014) An Approach to Landscape Character Assessment.
- Ref 6-25 Landscape Institute (2017) Visual Representation of Development Proposals Technical Guidance Note 02/17
- Ref 6-26 Landscape Institute (2011) Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and visual impact assessment
- Ref 6-27 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive)
- Ref 6-28 HM Government (1979) Ancient Monuments and Archaeological Areas Act
- Ref 6-29 HM Government (1990) Planning (Listed Buildings and Conservation Areas) Act
- Ref 6-30 Chartered Institute for Archaeologists (CifA) (2014) Standard and Guidance for historic environment desk-based assessment
- Ref 6-31 Historic England (2015) Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets
- Ref 6-32 Historic England (2015) Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment
- Ref 6-33 Ministry of Housing and Local Government (2018) Conserving and enhancing the historic environment [Online] available at: <https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment> [accessed 25/5/18]
- Ref 6-34 Office for National Statistics (2011) Census data [Online]. Available at: <https://www.ons.gov.uk/census/2011census/2011censusdata> [Accessed 25/05/18]
- Ref 6-35 Environment Agency (2013) CHP Ready Guidance for Combustion and Energy from Waste Power Plant



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LEGEND
 Red Line Boundary

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Purpose of Issue
 FOR INFORMATION

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 VPI IMMINGHAM B LTD

Project Title
 PROPOSED 299MW OCGT POWER STATION ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

Drawing Title
 SITE LOCATION

Drawn JW	Checked DH	Approved MS	Date 30/05/2018
AECOM Internal Project No. 60547702		Scale @ A3 1:30,000	Inset Map 1:200,000

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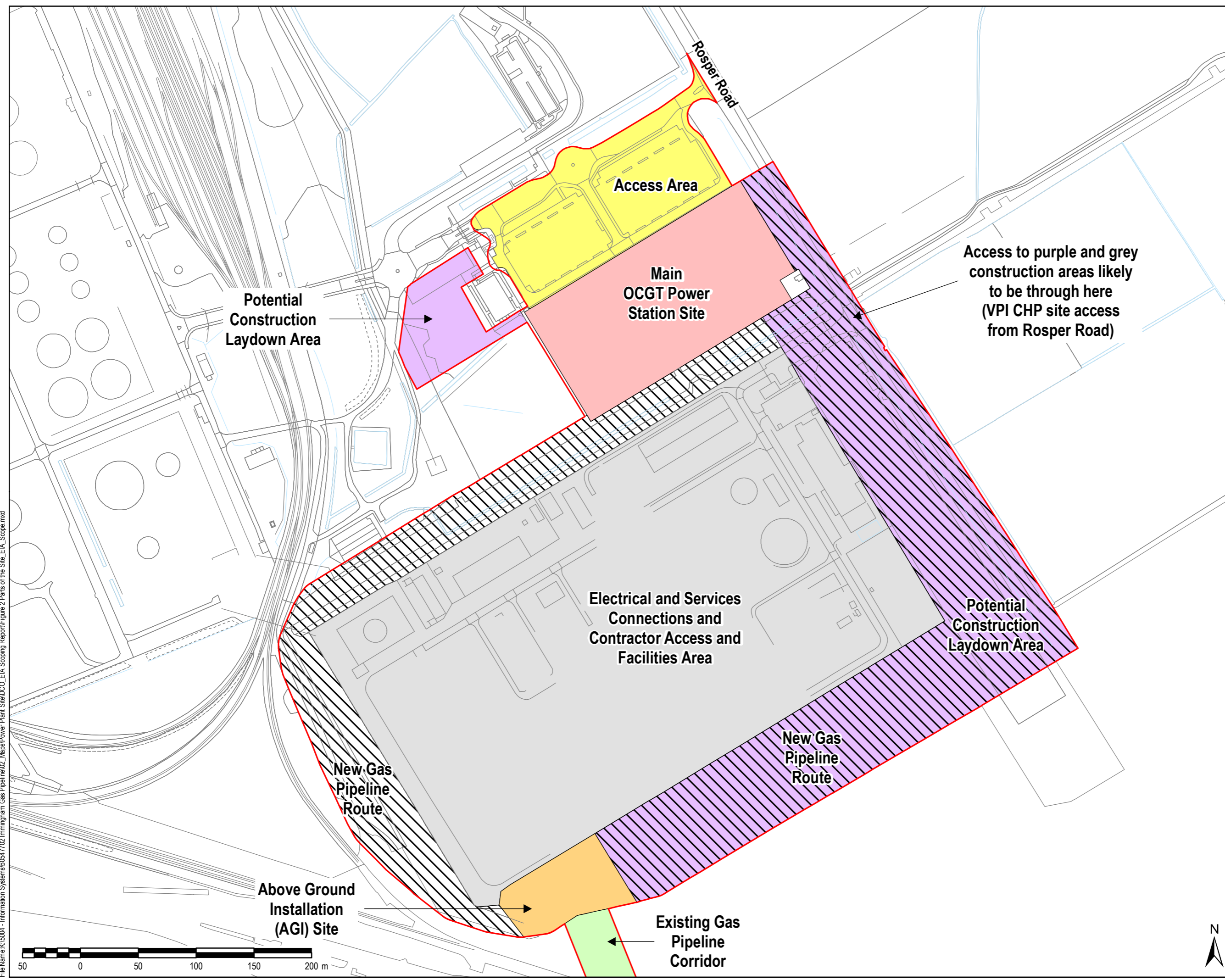
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Drawing Number
FIGURE 1

File Name: K15004 - Information Systems\60547702\Immingham Gas Pipeline\02_Maps\Power Plant Site\DCO_EIA_Scoping_Report\Figure 1 Site Location.mxd

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- LEGEND**
- Red Line Boundary
 - Above Ground Installation (AGI) Site
 - Access Area
 - Electrical and Services Connections and Contractor Access and Facilities Area
 - Existing Gas Pipeline Corridor
 - Main OCGT Power Station Site
 - New Gas Pipeline Route
 - Potential Construction Laydown Area



Access to purple and grey construction areas likely to be through here (VPI CHP site access from Rosper Road)

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Drawing Title
 PARTS OF THE SITE

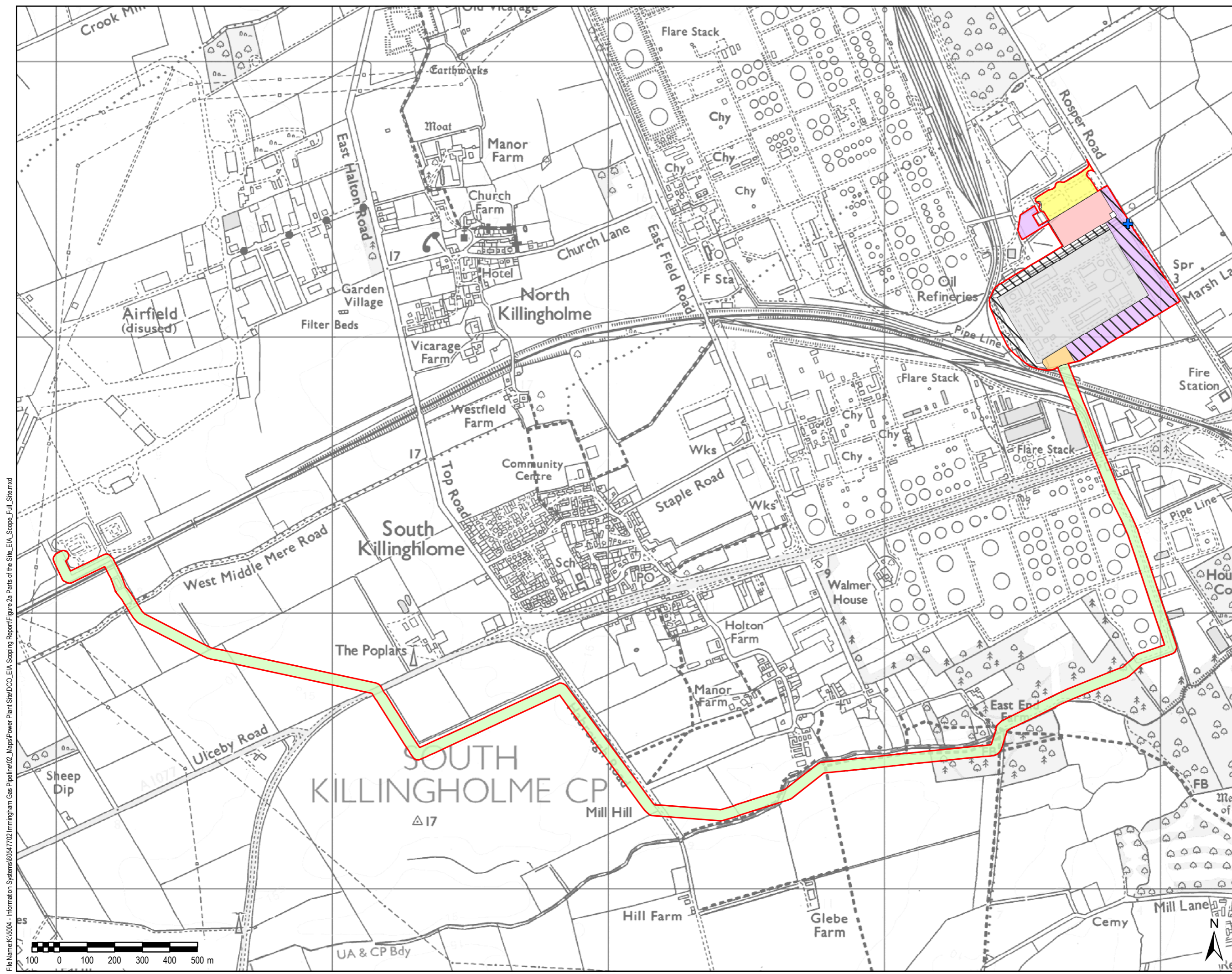
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FIGURE 2

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LEGEND

- Red Line Boundary
- Above Ground Installation (AGI) Site
- Access Area
- Electrical and Services Connections and Contractor Access and Facilities Area
- Existing Gas Pipeline Corridor
- Main OCGT Power Station Site
- New Gas Pipeline Route
- Potential Construction Laydown Area

Access to purple and grey construction areas likely to be through here (VPI CHP site access from Rosper Road)

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Drawing Title
PARTS OF THE SITE

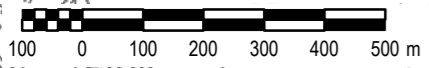
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FIGURE 2A

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Legend

- Red Line Boundary
- 5km Study Area
- Listed Building
 - Grade I
 - Grade II*
 - Grade II
- Record of Scheduled Monument
- Registered Parks and Garden
- Ramsar
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)
- Ancient Woodland
- Local Wildlife Site (within 2km of the red line)

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Drawing Title
ENVIRONMENTAL RECEPTORS WITHIN 5KM

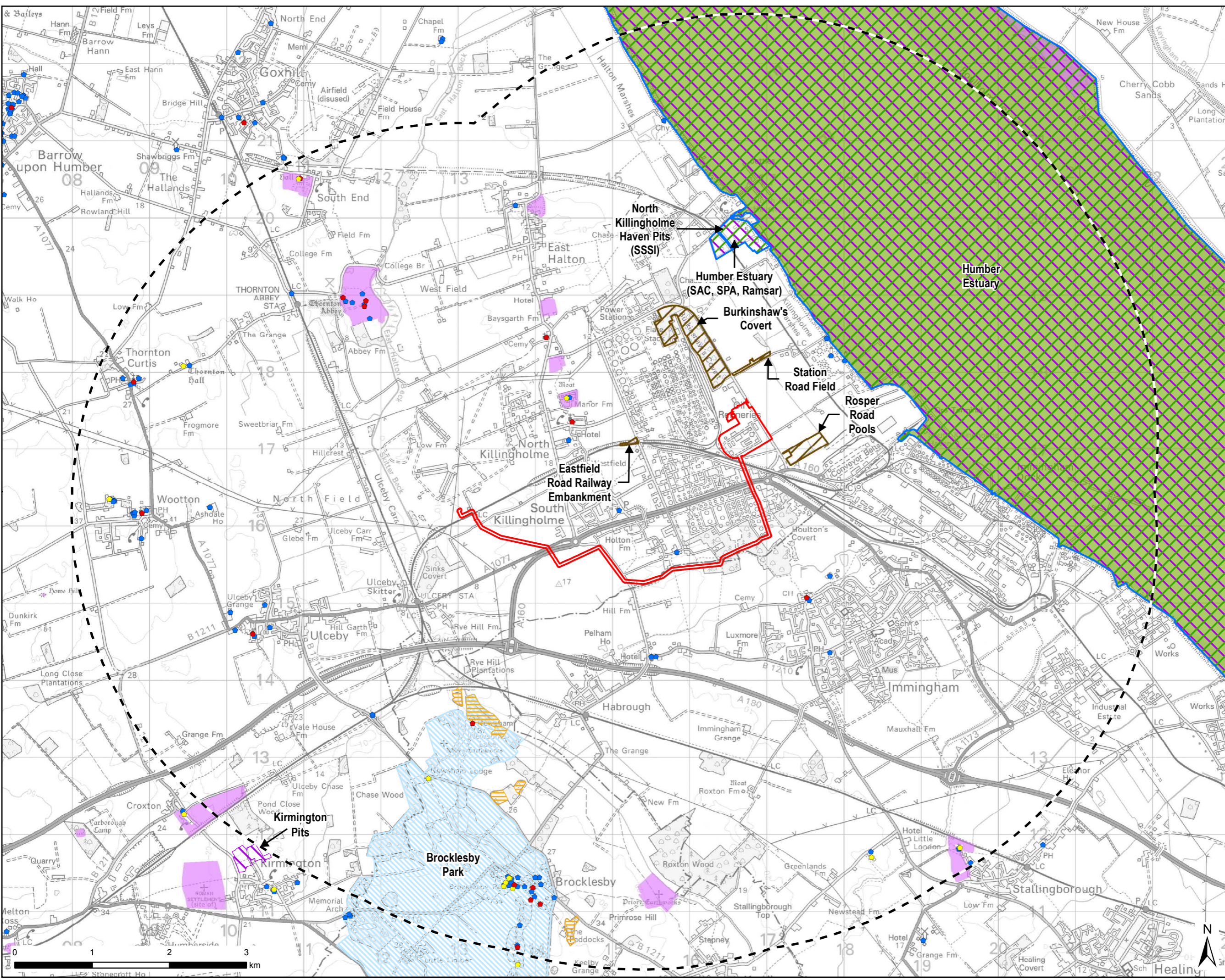
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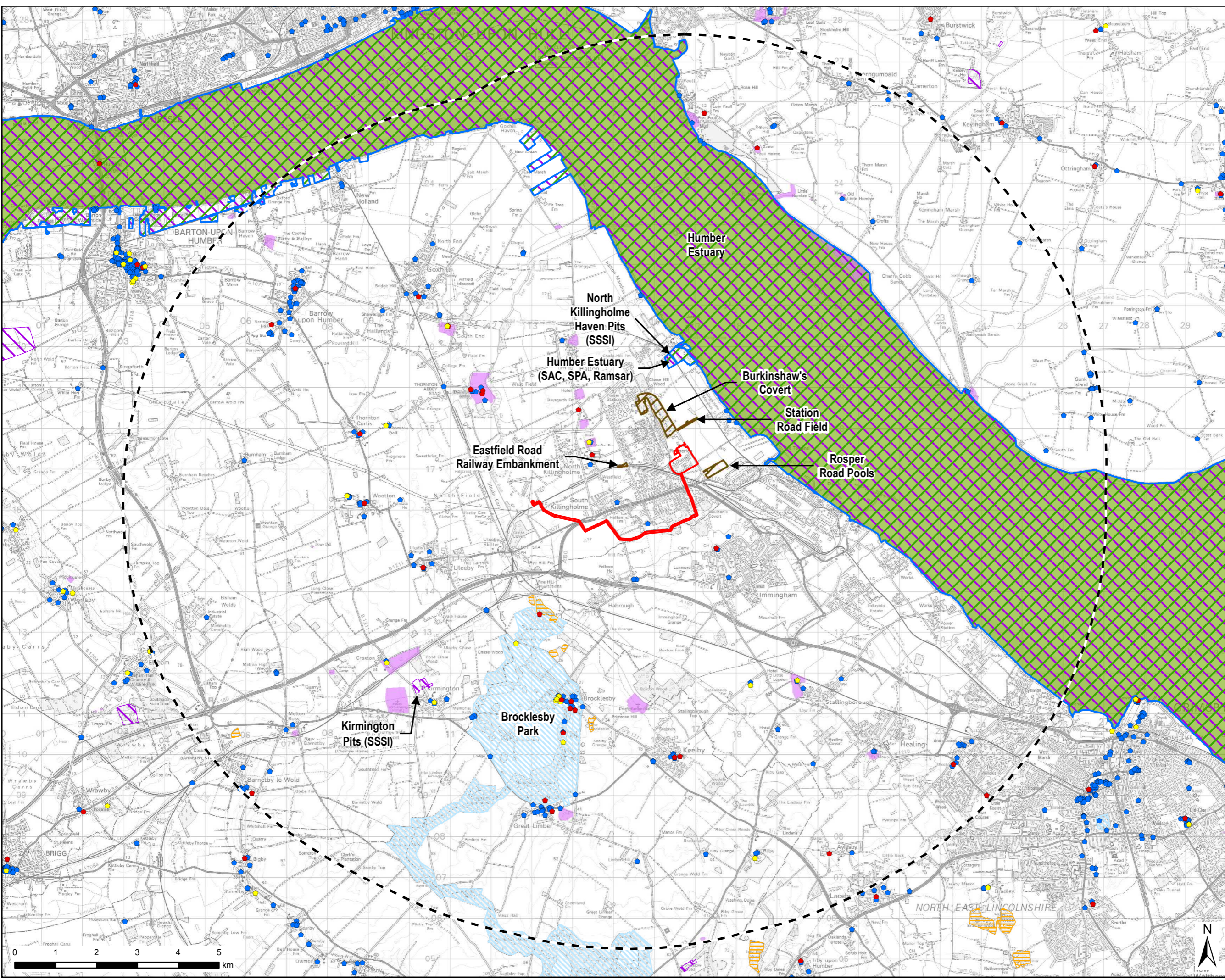
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FIGURE 3

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File Name: K15004 - Information Systems\60547702\Immingham Gas Pipeline\02_Maps\Power Plant Site\DCO_EIA Scoping Report\Figure 4 Environmental receptors within 10km.mxd



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Legend

- Red Line Boundary
- 10km Study Area
- Listed Building
 - Grade I
 - Grade II*
 - Grade II
- Ancient Woodland
- Ramsar
- Record of Scheduled Monument
- Registered Parks and Garden
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)
- Local Wildlife Site (within 2km of the red line)

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Drawing Title
ENVIRONMENTAL RECEPTORS WITHIN 10KM




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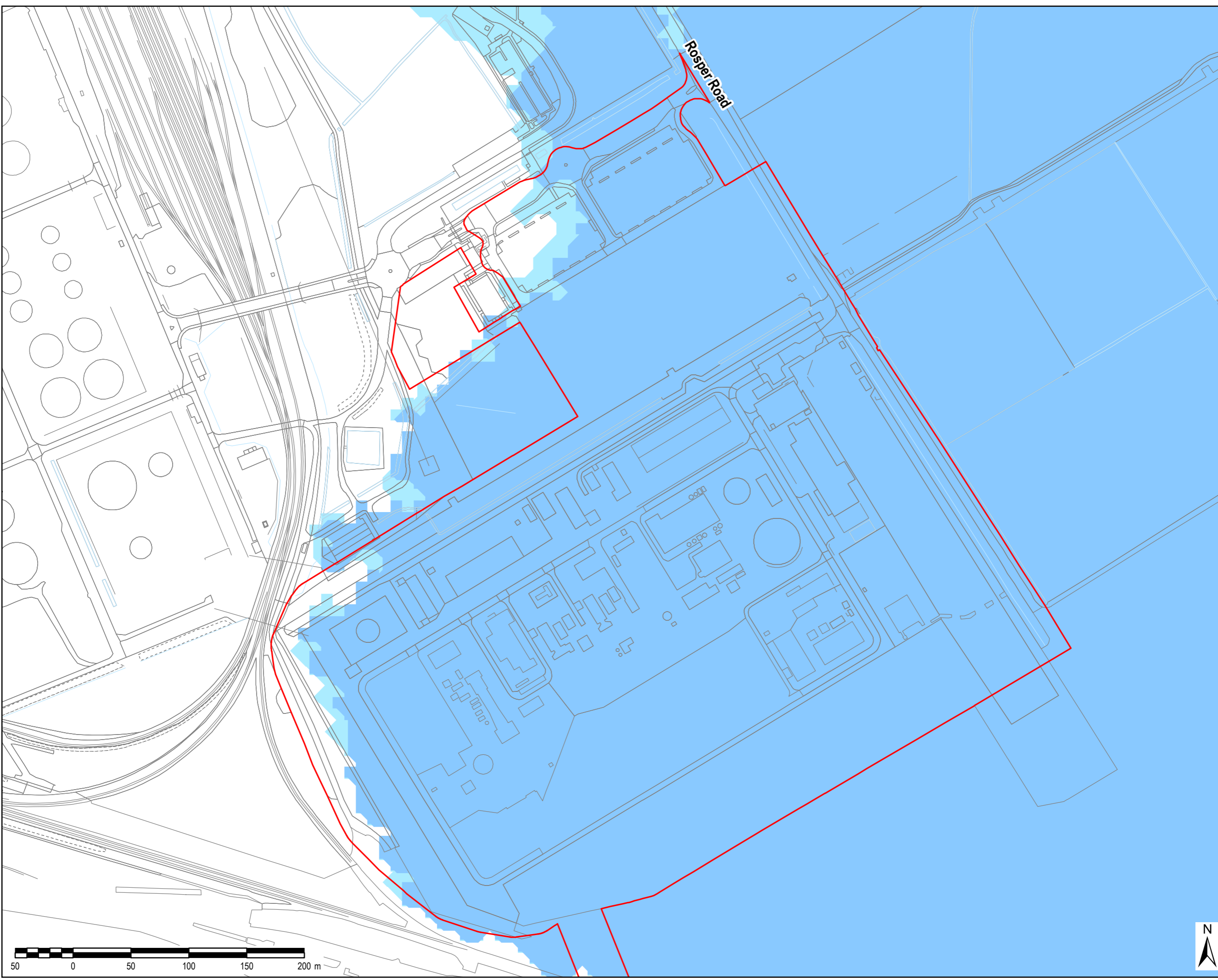
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LEGEND

-  Red Line Boundary
-  Flood Zone 2
-  Flood Zone 3



File Name: K15004 - Information Systems\60547702\Immingham Gas Pipeline\02_Maps\Power Plant\Site\DCO_EIA_Scoping Report\Figure 5 Flood Zones Around the Site Area.mxd

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Drawing Title
FLOOD ZONES AROUND THE SITE AREA

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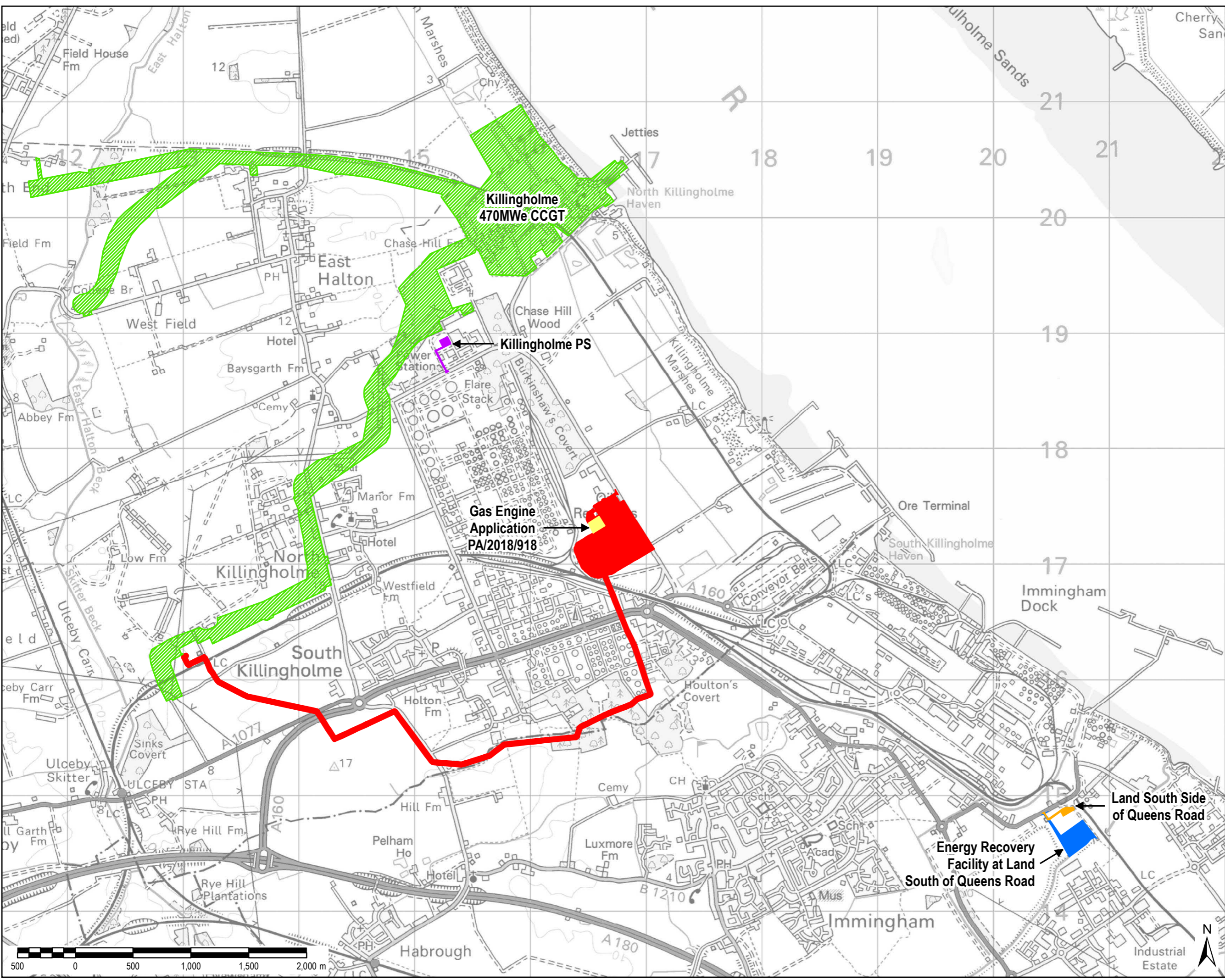
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FIGURE 5



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LEGEND

- Red Line Boundary
- Energy Recovery Facility at Land South of Queens Road
- Gas Engine Application (PA/2018/918)
- Land South Side of Queens Road
- Killingholme 470MWe CCGT
- Killingholme PS

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Drawing Title
OTHER DEVELOPMENTS CONSIDERED FOR CUMULATIVE IMPACTS

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FIGURE 6

