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Tables

No tables.

2. Site and Site Surroundings

2.1 Site Location

2.1.1 The Proposed Developments will be located on land within and around the boundaries of the existing VPI Immingham Combined Heat and Power (CHP) Plant ('the CHP Plant'), and the Phillips 66 Limited Humber Refinery ('the Refinery'). Together they are referred to as 'the Proposed Developments', and respectively 'the Proposed VPI Development' and 'the Proposed Phillips 66 Development'. The planning application boundaries for each of the Proposed Developments are referred 'the VPI Site' and 'the Phillips 66 Site' (collectively 'the Sites').

2.1.2 The Sites fall within the administrative area of North Lincolnshire Council (NLC) approximately 1.6 km north of Immingham town and 1.5 km west of the Humber Estuary. The Sites are largely within the control of the Applicants (Phillips 66 and VPI Immingham), with the exception of a small area of Network Rail land within the Phillips 66 Site required for pipeline and cable crossings of the railway. The locations of the Sites, which are approximately centred on national grid reference (NGR) 516819, 417035 for the VPI Site, and 516188, 416894 for the Phillips 66 Site, are shown in Figure 1.1 to 1.3 in ES Volume III.

2.1.3 The Sites' boundaries are also shown overlaid on an aerial photograph in Figure 2.1 in ES Volume III.

2.2 The Sites and Existing Land Use

Phillips 66 Site

2.2.1 The Phillips 66 Site (see Figure 1.2 in ES Volume III) is largely within the operational Humber Refinery, accessed from Eastfield Road, but also includes land to the east of the Refinery for pipeline and cable connections, including part of the railway line between the Port of Immingham and Ulceby which will need to be traversed by pipelines and cables. The total area of the Phillips 66 Site is 15.7 hectares (ha).

2.2.2 The main area required for the proposed Phillips 66 PCC plant and carbon dioxide (CO_2) compression (refer to Figure 2.1 (ES Volume III)) is in the north-west corner of the Humber Refinery and is currently used for open storage and temporary uses such as site cabins for maintenance contractors, which will be relocated to other parts of the Humber Refinery. The westernmost part of the proposed Phillips 66 PCC plant area is used for access (via an existing access from Eastfield Road and a proposed new access from Eastfield Road) and car parking and this is not anticipated to be required for the Phillips 66 PCC plant itself.

2.2.3 The route of the proposed CO_2 pipeline connecting the Phillips 66 PCC plant and CO_2 compression area to the assumed location of the CO_2 gathering network tie-in compound to the north-east of the Network Rail railway line comprises:

- an existing utilities corridor (known as Avenue A) along the northern boundary of the Refinery with several above ground pipes on racks which will be retained and will not be affected by the Proposed Phillips 66 Development;
- an existing pipe bridge over the Refinery railway sidings and the Network Rail railway line;
- currently vacant land on the north-east side of the Network Rail railway line.

2.2.4 The topography of the Phillips 66 Site is generally flat and low-lying at an elevation of approximately 10 m Above Ordnance Datum (mAOD).

2.2.5 Trees within the Phillips 66 Site have been assessed during an Arboricultural Survey. The results can be found in Appendix 2A Arboricultural Survey Report (ES Volume II).

VPI Site

2.2.6 The VPI Site (see Figure 1.3 in ES Volume III) is within and immediately to the south of the operational VPI Immingham CHP Plant, accessed from Rosper Road and separated from the Phillips 66 Site by the Network Rail railway line. The total area of the VPI Site is 28.5 ha.

2.2.7 The area for the proposed VPI PCC plant and CO_2 compression is to the south of the existing Power Station and comprises grassland with an open ditch running west-east through the centre, areas of hardstanding and existing below ground utilities. The northern part of the VPI PCC plant area was previously used for laydown during the construction of the existing VPI Immingham CHP Power Station.

2.2.8 The southernmost part of the VPI Site will not be developed by VPI (the land is reserved for other proposed developments including pipelines and tie-in compounds for the CO_2 gathering network(s)), but it will be used for construction laydown for the Proposed VPI Development.

2.2.9 The existing CHP Plant is included in the VPI Site to allow for pipeline and cable connections between the CHP Plant and the Proposed Development. Available areas of the CHP Plant will also be used for construction laydown, and some of the existing CHP Plant facilities may be shared with the Proposed VPI Development.

2.2.10 The topography of the VPI Site is generally flat and low-lying at an elevation of approximately 10 mAOD.

2.2.11 Trees within the VPI Site have been assessed during an Arboricultural Survey. The results can be found in Appendix 2A Arboricultural Survey Report (ES Volume II).

2.2.12 Public Right of Way (PRoW) SKIL91A runs within the VPI Site, between the existing railway line and Rosper Road. However, site observations and further research with the council indicated that this PRoW has not been in use for many years despite still being included on mapping. Therefore, an application has been submitted associated with the Proposed Development to extinguish this PRoW.

Access Routes

2.2.13 Access to the Sites from the Strategic Road Network (the A180) is via the A160.

2.2.14 The Phillips 66 Site is accessible via existing Refinery entrances on the A160 and Eastfield Road, which will be used during the construction and operation of the Proposed Phillips 66 Development. A new access is proposed on Eastfield Road for construction access and to enable a one-way route to be put in place for deliveries during operation for safety purposes (see Chapter 3: The Proposed Developments).

2.2.15 The VPI Site is accessible via the existing CHP Plant main entrance on Rosper Road and this entrance will provide the main access to the Proposed VPI Development during operation. Two other existing gates are located on Rosper Road along the eastern boundary of the Proposed VPI PCC plant area, and these may also be used during the construction and operation of the Proposed VPI Development. A new access is proposed on Rosper Road, to the north of the existing 'middle' access into the VPI Site (see Figure 2.1), which will be the main point of access during construction and provide maintenance and emergency access during operation (see Chapter 3: The Proposed Developments).

2.3 Site History

Phillips 66 Site

2.3.1 The Phillips 66 Site history is detailed within section 13.4 of Chapter 13 (ES Volume I) and the Phillips 66 Site archaeological background is provided within section 14.4 of Chapter 12 (ES Volume I).

VPI Site

2.3.2 The VPI Site history is detailed within section 13.4 of Chapter 13 (ES Volume I) and the VPI Site archaeological background is provided within section 14.4 of Chapter 12 (ES Volume I).

2.4 Site Surroundings

2.4.1 The topography of the area comprises a low-lying estuarine landscape.

2.4.2 The surrounding land-use is dominated by the large heavy industrial areas around the villages of Killingholme and Immingham, mixed with interspersed pockets of flat open farmland, woodland and natural coastal habitats.

2.4.3 Figures 2.2 and 2.3 (the Site Environmental Constraints plans in Appendix A), illustrate environmental constraints within 2 km and 15 km of the Sites. The environmental context of the Phillips 66 Site and the VPI Site is summarised below.

2.4.4 A number of environmental receptors relevant to the EIA have been identified within and outside the boundary of the Sites, as shown on Figure 2.2 and 2.3 (ES Volume III).

2.4.5 Where distances are quoted in this ES, the distance is defined (unless otherwise stated) as the shortest distance between the receptor and the closest point of the boundary of the Sites.

2.4.6 Key receptors for each topic area have been identified as part of the assessment process and details are included in the relevant technical chapters (Chapters 6 – 18). A summary is also provided below.

Residential Receptors

2.4.1 The Sites are situated in a heavily industrialised area with limited residential receptors nearby.

2.4.2 The nearest residential settlements are the villages of South Killingholme (approximately 0.5 km west of the Phillips 66 Site) and North Killingholme (approximately 0.8 km north west of the Phillips 66 Site). The town of Immingham is also located approximately 1.6 km to the south of the Sites. The closest residential receptors to the Sites are 545 m west of the Phillips 66 Site (in Sough Killingholme) and 340 m east of the VPI Site (on Marsh Lane).

2.4.3 Potential effects on residential receptors are considered in a number of chapters including Chapter 8: Air Quality, Chapter 9: Noise and Vibration, Chapter 10: Traffic and Transport, and Chapter 14: Landscape and Visual Amenity.

Ecological Receptors

2.4.4 The Conservation of Habitats and Species Regulations 2017 (‘the Habitats Regulations’) provide for the ecological designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

2.4.5 The Humber Estuary Site of Special Scientific Interest (SSSI)/ Special Protection Area (SPA)/ Special Area of Conservation (SAC)/ Ramsar site is located approximately 1.5 km east of the Sites (at its nearest point). The Humber Estuary includes a range of coastal habitats (such as mud and salt flats, lagoons, salt marshes and coastal sand dunes), which provide feeding and roosting opportunities for important numbers of waterbirds in non-breeding season.

2.4.6 There are no other European sites within 5 km of the Sites. Further, there no other European sites within 15 km, which could be impacted by air emissions from the Proposed Developments.

2.4.7 North Killingholme Haven Pits SSSI is located approximately 2.2 km north of the VPI Site and 2.7 km north of the Phillips Site.

2.4.8 There are four locally designated sites within 2 km of the Sites, with the closest being Rosper Road Pools Local Wildlife Site (LWS) 130 m to the east of the VPI Site.

2.4.9 The Phillips 66 Site itself is not considered to be sensitive with respect to biodiversity, given the industrial land uses in and around the Phillips 66 Site, although great crested newts are present in the wider area.

2.4.10 The VPI Site, south of the existing VPI Immingham CHP Plant, comprises a mosaic of habitats including:

- open mosaic habitats on previously disturbed land;
- modified grassland, which makes up the largest component of habitats being typically nutrient-rich and species-poor, but includes areas of false oat-grass grassland, tufted hair-grass grassland, stands of common reed, and mosaics of rushes, as well as tall herb dominated areas;
- other neutral grassland, occurring along the south-eastern boundary and comprising a more open grassland with finer grasses and a herb rich sward;
- bramble and bramble dominated mixed scrub, form vast areas of homogenous habitat;
- other broadleaved woodland, which occurs along the railway track over ballast and comprises of an ash dominated canopy and hawthorn shrub layer, with a limited ground flora; and
- drains and ditches used for discharge from the operational facilities.

2.4.11 The potential effects of the Proposed Developments on designated ecological sites and other ecological receptors are considered in Chapter 13: Ecology and Nature Conservation, with supporting information provided in Chapter 6: Air Quality, Chapter 7: Noise and Vibration and Chapter 9: Water Environment and Flood Risk.

Transport Receptors

2.4.12 The Proposed Developments are located on land to the north of A160 Humber Road, Immingham, within the administrative boundary of NLC which, as a unitary authority, is responsible for both Planning and Highways matters.

2.4.13 The Proposed Developments will utilise the existing accesses to the VPI Site and to the Phillips 66 Site (see Figure 2.1 in ES Volume III) both during construction and operation of the Proposed Development. A new access (shown on Figure 2.1) is also proposed to be constructed from the public highway (Eastfield Road) into the north-west corner of the Phillips 66 Site for construction use and operational deliveries, and a new access (shown on Figure 2.1) is also proposed to be construction from the public highway (Rosper Road) into the VPI Site for construction use and maintenance and emergency use during operation.

2.4.14 The existing VPI Immingham CHP Plant site is accessed from Rosper Road, a single-carriageway road that serves the industrial area of Killingholme and Humber Terminal. Rosper Road joins the Humber Road at the A160 roundabout and railway crossing approximately 0.3 km to the south of the VPI Site.

2.4.15 The existing Phillips 66 Humber Refinery is accessed from Eastfield Road, a single carriage road that serves the industrial area of Killingholme, and the A160. Eastfield Road joins the A160 junction approximately 0.4 km south of the Phillips 66 Site.

2.4.16 PRoW SKIL91A is shown on the Definitive Map crossing the VPI Site south of the CHP Plant, between the existing railway line and Rosper Road. This PRoW has not been present on the VPI Site for many years and an application to extinguish the PRoW is currently being processed.

2.4.17 An existing pelican crossing is provided across Eastfield Road along the Phillips 66 Site's western frontage and controlled pedestrian crossing facilities are also provided at the A160 Humber Road/ Eastfield Road signalised crossroads junction, south-east of the Phillips 66 Site.

2.4.18 Further information can be found in Chapter 8: Traffic and Transport.

Air Quality Receptors

2.4.19 There is one AQMA designated within the administrative boundary of NLC however this is over 15 km from the Sites, in Scunthorpe, and therefore it is considered unlikely that this would

be affected by emissions from the Proposed Developments. A previous AQMA at Low Santon was revoked in 2018.

2.4.20 There is one AQMA designated within the neighbouring administrative boundary of North East Lincolnshire Council (NELC). This is the Grimsby AQMA approximately 12.6 km south-east of the Sites. There was previously an AQMA designated in Immingham, approximately 2.5 km south of the Sites, yet this was revoked in 2016.

2.4.21 Further information can be found in Chapter 6: Air Quality (ES Volume I).

Geological and Hydrogeological Receptors

2.4.22 As detailed in the Phase 1 Geo-Environmental Site Assessment (Appendix 10A (ES Volume II)), the local geology for both Sites is characterised by Till, Devensian – Diamicton superficial deposits which overlie Burnham Chalk Formation – Chalk. Although not mapped, Made Ground is expected across parts of the Sites, given the historical phases of development that have taken place.

2.4.23 The Environment Agency classifies the underlying superficial geology as Secondary (undifferentiated) and the Burnham Chalk Formation as a Principal aquifer. The Sites lie within a Total Catchment Groundwater Source Protection Zone (SPZ).

2.4.24 Groundwater levels within the historic borehole records indicate a groundwater rest level of 2.74 m below ground level (bgl) and groundwater encounters at 12.80 m bgl and 18 m bgl for the VPI Site. For the Phillips 66 Site, historic borehole records indicate a groundwater rest level of 7.01 m bgl and a groundwater level of 9.5 m bgl was recorded at two boreholes near the Phillips 66 Site, with another recording a level of 18 m bgl.

2.4.25 Further information can be found in Chapter 10: Geology, Hydrogeology and Land Contamination.

Hydrological Receptors

2.4.26 South Killingholme Drain runs eastwards through the southern part of the Phillips 66 Humber Refinery, crossing under the railway and into the VPI Site before heading south-east along Rosper Road and ultimately entering the Humber Estuary at South Killingholme Haven. A branch of South Killingholme Drain also runs along Rosper Road to the east of the VPI Site.

2.4.27 Other surface watercourses and waterbodies in the vicinity of the Sites where hydrological connections may exist include:

- North Beck Drain, approximately 4.8 km south-east of both Sites;
- the Humber Estuary, approximately 1.5 km to the east of both Sites;
- a series of unnamed land drains; and
- Rosper Road Pools, an artificial flood relief reservoir approximately 130 m east of the VPI Site and 500 m east of the Phillips 66 Site.

2.4.28 The Environment Agency 'Flood map for planning' indicates that the majority of the Phillips 66 Site is located within Flood Zone 1 with only the easternmost part of the Phillips 66 Site being in Flood Zones 2 and 3. The VPI Site is located within Flood Zone 3. Flood Zone 1 has a low probability of flooding (less than 1 in 1,000 annual probability) whereas Flood Zone 3 has a high probability (greater than 1 in 100 annual probability of river flooding or a 1 in 200 or greater annual probability of flooding from the sea).

2.4.29 Further information can be found in Chapter 9: Water Environment and Flood Risk and Appendix 9A: Flood Risk Assessment (ES Volume II).

Cultural Heritage Receptors

2.4.30 The Sites are not considered to fall within the setting of any listed buildings, conservation areas, registered parks and gardens, or Scheduled Monuments.

2.4.31 There are 33 listed buildings within 5 km of the Sites, four of which are located within 1 km of the Sites. The closest are:

- The Nook, grade II, approximately 450 m west of the Phillips 66 Site (over 1 km from the VPI Site);
- The Baptist Chapel, grade II, approximately 570 m south of the Phillips 66 Site (over 1 km from the VPI Site);
- The Church of St Denys, grade I, approximately 930 m north-west of the Phillips 66 Site (over 1 km from the VPI Site);and
- The Old Vicarage, grade II, approximately 950 m north-west of the Phillips 66 Site (over 1 km from the VPI Site).

2.4.32 Further information can be found in Chapter 12: Cultural Heritage.

Landscape and Visual Receptors

2.4.33 The Sites have a relatively flat topography so the Zone of Theoretical Visibility (ZTV) for the Proposed Developments is relatively large (see Figures 11.2 to 11.4 in ES Volume III), albeit set in the context of the existing industrial developments including the Phillips 66 Humber Refinery and VPI Immingham CHP Plant. The closest residential properties are located along Marsh Lane approximately 0.3 km east of the VPI Site and on Staple Road approximately 0.5 km south-west of the Phillips 66 Site.

2.4.34 The Sites fall within the Humber Estuary National Character Area (NCA) 41 (Natural England, 2012). This NCA focuses on the low-lying estuarine landscape, with extensive stretches of intertidal habitats including mudflats, salt marsh and reedbeds, coastal dunes and wetlands along the side of the estuary.

2.4.35 The North Lincolnshire Landscape Character Assessment (1999) defines the area as being within the Humber Estuary North Lincolnshire Character Area. The Sites are located within the Industrial Landscape Character Type (LCT) South Humber Gateway, dominated by industry, the key characteristics include remnant pockets of flat open farmland, woodland and natural coastal habitats interspersed within the dominant industrial infrastructure.

2.4.36 The large industrial areas around Killingholme and Immingham dominate the landscape. The surrounding area to the north-east is largely rural, comprising mostly farmland and pockets of woodland, with more sporadic development and residential areas.

2.4.37 Further information can be found in Chapter 11: Landscape and Visual Amenity.

2.5 References

Natural England (2012) NCA Profile: 41 Humber Estuary (NE344). [Available at] http://publications.naturalengland.org.uk/publication/2285747?category=587130

North Lincolnshire Council (1999) 'North Lincolnshire Landscape Character Assessment'. https://m.northlincs.gov.uk/public/localplan/evidence/NLC%20Landscape%20Character%20Assessment%20v2%20(4).pdf