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3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

3.1 Introduction

3.1.1 The purpose of this chapter of the Preliminary Environmental Information (PEI) Report is to provide a summary of the existing environment at the Proposed Development Site and its surroundings. Further relevant details are presented within the baseline sections of each of the topic chapters as presented within this PEI Report (refer to Chapters 8 to 22 (PEI Report, Volume I)).

3.2 Site Location

3.2.1 The Proposed Development Site is shown on Figure 1-1: Site Location (PEI Report, Volume II). The area within this boundary is defined and referred to as the '*Proposed Development Site*'. The final Proposed Development Site for the purposes of the Development Consent Order (DCO) Application will be refined through on-going studies, having regard to responses to the Applicant's consultation. The final Proposed Development Site will be referred to as the 'Order Limits' in the DCO Application.

3.2.2 The Main Site will be located at '*The Foundry*' site within the Teesworks development site, as shown by Figure 4-1: Proposed Development Site Boundary (including location of the Main Site) (PEI Report, Volume II).

3.2.3 The Proposed Development Site is located primarily within the administrative boundaries of Redcar and Cleveland Borough Council (RCBC) and Stockton-on-Tees Borough Council (STBC). The Hydrogen Pipeline Corridor extends further north-west to include land within the administrative boundary of Hartlepool Borough Council (HBC).

3.2.4 This chapter is supported by Figures 3-1 to 3-4 (PEI Report, Volume II).

3.3 The Site

3.3.1 For the purposes of the PEI Report, the Proposed Development Site is split into the Main Site which is the location of the Production Facility together with the associated carbon capture and compression facilities and ancillary infrastructure (refer to Figure 4-1, PEI Report, Volume II); and the Associated Development which include the following:

- CO₂ Export Corridor (refer to Figure 4-3 in PEI Report, Volume II);
- Hydrogen Pipeline Corridor (refer to Figure 4-4 in PEI Report, Volume II);
- Natural Gas Connection Corridor (refer to Figure 4-5 in PEI Report, Volume II);
- Electrical Connection Corridor (refer to Figure 4-6 in PEI Report, Volume II);
- Water Connections Corridor (including wastewater treatment and disposal infrastructure) (refer to Figure 4-7 in PEI Report, Volume II); and
- Other Gases (Oxygen and Nitrogen) Connection Corridor (refer to Figure 4-8 in PEI Report, Volume II).

3.3.2 Further detail regarding the Proposed Development is contained within Chapter 4: Proposed Development (PEI Report, Volume I).

- 3.3.3 The Proposed Development Site encompasses an area of approximately 1,400 hectares (ha). It is indicative at this stage and subject to revision. The land required for the Proposed Development will be subject to appraisal and refinement as the preparation of the DCO Application progresses.
- 3.3.4 The final layout that will be incorporated within the Proposed Development Site will be determined through ongoing studies of potential constraints and discussions with relevant stakeholders.
- 3.3.5 Any existing structures currently located within the Main Site are expected to be demolished (by others under a separate consent) prior to commencement of works associated with the Proposed Development. Therefore, these demolition works do not form part of the Proposed Development and will not be assessed as part of the Environmental Impact Assessment (EIA).

3.4 Environmental Receptors

- 3.4.1 Numerous environmental receptors have been identified within and in the vicinity of the Proposed Development Site (pursuant to the Study Areas as outlined in the various technical chapters in the PEI Report, Volume I). All distances presented herein are given as the shortest distance between the receptor and the closest point of the relevant part of the Main Site.
- 3.4.2 The Main Site comprises approximately 91 ha of land in total for Phase 1 and Phase 2. It is not anticipated that all this land will be required, but it is presented as a worst-case scenario until the layout of the Proposed Development is confirmed within this area.
- 3.4.3 The Main Site comprises former industrial land that was used for steel making production, including a mix of industrial buildings. As of June 2023, much of the site infrastructure including industrial buildings and overhead pipes are either demolished or in the process of being dismantled. A combination of hardstanding and road networks remain on the Main Site, surrounded by informal vegetation (primarily grass), with occasional shrubs and small trees.
- 3.4.4 The topography of the Main Site is relatively flat, with typical ground levels of between 6 - 8 m Above Ordnance Datum (AOD).
- 3.4.5 The following environmental resources/receptors have been identified in the vicinity of the Main Site.

Residential

- 3.4.6 The Main Site is generally remote from residential receptors. Marsh Farmhouse is the closest residential receptor, located approximately 1.3 km east of the Main Site, in Warrenby.
- 3.4.7 Dormanstown is located approximately 1.3 km to the south-east of the Main Site, whilst Redcar is located approximately 2.6 km to the east.
- 3.4.8 The main residential areas in the vicinity of the Main Site are illustrated indicatively on Figure 3-1 (PEI Report, Volume II).

Traffic and Transport

- 3.4.9 The Tees Valley Line, a passenger railway, runs approximately 0.9 km south-east of the Main Site. The mothballed Redcar British Steel railway station (no longer operational) is located approximately 1.2 km to the south-west.
- 3.4.10 There are no Public Rights of Way (PROWs) within the Main Site. The England Coast Path, a National Trail, runs approximately 1.3 km east of the Main Site. The Teesdale Way Long Distance Route runs adjacent to the Main Site along its northern boundary. There are no other National Trails within 5 km of the Main Site.
- 3.4.11 Whilst the Main Site is located within access land in the England Coastal Margin defined by the Countryside and Rights of Way (CRoW) Act (2000), public access for industrial areas in South Tees is currently restricted under the CRoW Act on the grounds of public safety until 21st July 2027 (Case Number 20140873571) after which date the restriction will be reviewed.
- 3.4.12 Further information on receptors relevant to traffic and transportation located in the vicinity of the Proposed Development Site is presented in Chapter 15: Traffic and Transport (PEI Report, Volume I). In addition, PROW that are not within the Main Site are illustrated on Figure 3-1 (PEI Report, Volume II).

Ecology

- 3.4.13 Within 15 km of the Main Site there are:
- Three Special Protection Areas (SPAs):
 - Teesmouth and Cleveland Coast SPA located immediately north of the Main Site;
 - North York Moors SPA located approximately 12.2 km south-east of the Main Site; and
 - Northumbria Coast SPA located approximately 13.5 km north-west of the Main Site.
 - Two Ramsar sites:
 - Teesmouth and Cleveland Coast Ramsar Site located immediately north of the Main Site; and
 - Northumbria Coast Ramsar Site located approximately 13.5 km north-west of the Main Site.
 - Two Special Areas of Conservation (SACs):
 - North York Moors SAC located approximately 12.2 km south-east of the Main Site; and
 - Durham Coast SAC located approximately 13.5 km north-west of the Main Site.
 - Two National Nature Reserves (NNRs):
 - Teesmouth NNR located approximately 1.6 km west of the Main Site; and

- Durham Coast NNR located approximately 12.5 km north-west of the Main Site.

- 3.4.14 There are no proposed Ramsar Sites or potential SPAs within 15 km of the Main Site.
- 3.4.15 There is one Site of Special Scientific Interest (SSSI) within 5 km of the Main Site, that being Teesmouth and Cleveland Coast SSSI, which is located adjacent to the Main Site.
- 3.4.16 There is one Local Nature Reserve (LNR) within 5 km of the Main Site, that being the Seaton Dunes and Common LNR which is located approximately 3.1 km to the north-west.
- 3.4.17 All the above statutory designated ecological sites are illustrated on Figure 3-4 (PEI Report, Volume II).
- 3.4.18 Non-statutory designated ecological sites are described in Chapter 12: Ecology and Nature Conservation (PEI Report, Volume I) and shown on Figure 3-3 (PEI Report, Volume II).
- 3.4.19 Further information on ecological receptors located in the vicinity of the Proposed Development Site is presented in the section '*Baseline Conditions*' of Chapter 12: Ecology and Nature Conservation (including aquatic ecology), Chapter 13: Ornithology and Chapter 14: Marine Ecology (PEI Report, Volume I) and their associated figures in PEI Report, Volume II.

Hydrology and Flood Risk

- 3.4.20 The River Tees (a Main River) discharges to the North Sea via the Tees Estuary at Tees Mouth and is located approximately 0.9 km west of the Main Site. Other watercourses within 1 km of the Main Site include:
- Dabholm Gut¹ a man-made tidal inlet located approximately 0.7 km south of the Main Site;
 - The Fleet located approximately 0.8 km east of the Main Site; and
 - The Mill Race located approximately 0.9 km south-east of the Main Site.
- 3.4.21 The Environment Agency '*Flood map for planning*' (Environment Agency, 2022) indicates that the whole of Main Site is located within Flood Zone 1 that is defined as '*land having a less than 0.1% annual exceedance probability (AEP) of river or sea flooding*'.
- 3.4.22 Further information on hydrology and flood risk receptors located in the vicinity of the Proposed Development Site is presented in Chapter 9: Surface Water, Flood Risk and Water Resources (PEI Report, Volume I) and illustrated on Figures 3-2 and 9-1 to 9-5 (PEI Report, Volume II).

Geology and Hydrogeology

- 3.4.23 The Main Site is underlain by a sequence of Made Ground, Tidal Flat Deposits and Glacial Till (Boulder Clay)/Glacio-lacustrine deposits, underlain by Triassic Mercia

¹ Also referenced on early mapping sources as Dabholm Cut. For the purposes of this report, this watercourse/feature is referred to consistently as Dabholm Gut. It is fed by a combined discharge from number of watercourses and the permitted discharge from Bran Sands Wastewater Treatment Works (WWTW).

Mudstone bedrock in the north-west, Triassic Penarth Formation in the centre and Jurassic Redcar Mudstone Formation in the south-east.

- 3.4.24 The Main Site is located over 5 km south-east of the nearest aquifer Source Protection Zone (SPZ). There are no Nitrate Vulnerable Zones (NVZs), Drinking Water Protected Areas, Drinking Water Safeguard Zones (Surface Water and Groundwater) or groundwater, potable water or surface water abstraction licences located within 1 km of the Main Site.
- 3.4.25 Further information on geology and hydrogeology receptors located in the vicinity of the Proposed Development Site is presented in Chapter 9: Surface Water, Flood Risk and Water Resources, Chapter 10: Geology, Hydrogeology and Contaminated Land (PEI Report, Volume I) and illustrated on Figures 9-1 to 9-5 and 10-1 to 10-23 (PEI Report, Volume II).

Cultural Heritage

- 3.4.26 There are no designated heritage assets within the Main Site.
- 3.4.27 There are 59 listed buildings within 5 km of the Main Site. The closest are three Grade II listed buildings (Marsh Farmhouse and Farm Cottage, 'Garden Wall South of Marsh Farmhouse', and 'Barn and Stable circa 10 metres north-west of Marsh Farmhouse'), located approximately 1.3 km to the east of the Main Site at Warrenby.
- 3.4.28 There are four conservation areas within 5 km of the Main Site as follows:
- Coatham Conservation Area, Redcar, located approximately 2.5 km east of the Main Site;
 - Kirkleatham Conservation Area, located approximately 3.8 km south-east of the Main Site;
 - Seaton Conservation Area, located approximately 4.6 km north-west of the Main Site; and
 - Wilton Conservation Area located approximately 5 km south-east of the Main Site.
- 3.4.29 There are no scheduled monuments, world heritage sites, registered parks and gardens, registered battlefields or heritage coasts within 5 km of the Main Site.
- 3.4.30 Further information on cultural heritage receptors located in the vicinity of the Proposed Development Site is presented in Chapter 17: Cultural Heritage (PEI Report, Volume I) and illustrated on Figures 3-1, and 17-1 to 17-4 (PEI Report, Volume II).

Landscape

- 3.4.31 The Main Site is located within the Tees Lowlands National Character Area (NCA).
- 3.4.32 There are no Landscape Character Designations covering the industrial complexes along the banks of the River Tees, including the Main Site and the surrounding area.
- 3.4.33 Further information on landscape receptors located in the vicinity of the Proposed Development Site is presented in Chapter 16: Landscape and Visual Amenity (PEI Report, Volume I) and illustrated on Figures 16-1 to 16-2 (PEI Report, Volume II).

3.5 References

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