

H2Teesside Project

Planning Inspectorate Reference: EN070009/APP/3.2

Land within the boroughs of Redcar and Cleveland and Stockton-on-Tees, Teesside and within the borough of Hartlepool, County Durham

Document Reference: 3.2 – Statement of Reasons

The Planning Act 2008 – Section 37(3)(c)

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulations 5(2)(h) and 5(2)(n)



Applicant: H2 Teesside Ltd

Date: March 2024

DOCUMENT HISTORY

Document Ref	3.2		
Revision	0		
Author	Katie Moffatt		
Signed	KM	Date	March 2024
Approved By	Nick McDonald		
Signed	NM	Date	March 2024
Document Owner	Pinsent Masons LLP		

GLOSSARY

Abbreviation	Description
APFP Regulations	The Applications: Prescribed Forms and Procedure Regulations 2009
Applicant	H2 Teesside Limited
Application (or DCO Application)	The application for a DCO made to the SoS under Section 37 of PA 2008 in respect of the Proposed Development because the Proposed Development is a project of national significance for which development consent is required further to the Section 35 Direction
Associated Development	Defined under Section 115(2) of PA 2008 as development which is associated with the principal development and that has a direct relationship with it. Associated development should either support the construction or operation of the principal development or help address its impacts. It should not be an aim in itself but should be subordinate to the principal development
Authorised Development	The development for which development consent is sought, as set out in Schedule 1 of the DCO
CCUS	Carbon Capture, Usage and Storage - is group of technologies designed to reduce the amount of carbon dioxide (CO ₂) released into the atmosphere from coal and gas power stations as well as heavy industry including cement and steel production. Once captured, the CO ₂ can be either re-used in various products, such as cement or plastics (usage), or stored in geological formations deep underground (storage)
CO2	Carbon Dioxide - an inorganic chemical

	compound with a wide range of commercial uses
CO2 Export Corridor	The route from the Hydrogen Production Facility to the CO2 offtake/connection with NEP infrastructure
Connection Corridors	Collectively the: <ul style="list-style-type: none"> • CO2 Export Corridor; • Electrical Connection Corridor; • Hydrogen Distribution Network; • Natural Gas Connection Corridor; • Other Gases Connection Corridor; and • Water Connections Corridor
DCO	A Development Consent Order made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a Nationally Significant Infrastructure Project. A DCO can incorporate or remove the need for a range of consents which would otherwise be required for a development. A DCO can also include rights of compulsory acquisition
DESNZ	Department for Energy Security and Net Zero
ECC	East Coast Cluster
EIA	Environmental Impact Assessment - the assessment of the likely significant environmental effects of a development, undertaken in accordance with the EIA Regulations
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) setting out how the environmental assessment of NSIPs must be carried out and the procedures that must be followed
Electrical Connection Corridor	The route for the required electricity supply
EPC Contractor	Engineering, Procurement and Construction contractor who will undertake the detailed engineering design, procurement and deliver the construction of the Proposed Development
ES	Environmental Statement - a report in which the process and results of an Environment Impact Assessment are documented
H2T	The H2Teesside Project – the name of the Proposed Development
Hydrogen Distribution Network	A gaseous phase hydrogen pipeline network for the purpose of connecting to potential off-takers at various industrial installations across the Tees Valley

Hydrogen Production Facility	The hydrogen production facility to be built on the Main Site
HyGreen Project	A green hydrogen project being promoted by bp in Teesside.
Land Plans	The plans showing the land that is required for the Proposed Development, and the land over which interests or rights in land are sought as part of the Order
Main Site	The land where the Hydrogen Production Facility will be located (the Foundry).
Natural Gas Connection Corridor	The routing for connection to the National Gas Grid (NGG)
N2	Nitrogen
NEP	Northern Endurance Partnership
NSIP	Nationally Significant Infrastructure Project - defined by the PA 2008 which must be authorised by the making of a DCO under the PA 2008
NZT or the NZT Project	The Net Zero Teesside Project consented by The Net Zero Teesside Order 2024 which came into force on 11 March 2024
O2	Oxygen
Order	The H2 Teesside Order - the name of the DCO for the Proposed Development
Order land	The land means the land shown coloured pink and the land shown coloured blue on the Land Plans, which is described in the Book of Reference
Order limits	The limits of land to be acquired permanently or used temporarily as shown on the Land Plans, and the limits of land within which the Authorised Development, as shown on the Works Plans may be carried out.
Other Gases Connection Corridor	Other gas connection pipelines which may be required for the transportation of compressed O2 and N2 for use at the Hydrogen Production Facility
PA 2008	The Planning Act 2008 which is the legislation in relation to applications for NSIPs, including pre-application consultation and publicity, the examination of applications and decision making by the Secretary of State
Proposed Development	The H2Teesside Project being the development to which the Application relates and which requires a DCO, and as set out in Schedule 1 to the Order
Proposed Development Site	The land corresponding to the Order limits which is required for the construction and operation of

	the Proposed Development
Requirements	The 'requirements' at Schedule 2 to the Order that, amongst other matters, are intended to control the final details of the Proposed Development as to be constructed and also to control its operation, amongst other matters to ensure that it accords with the EIA and does not result in unacceptable impacts
Section 35 Direction	The direction under section 35 of the PA 2008 dated 22 December 2022 from the SoS that the Specified Elements together with any matters/development associated with them should be treated as development for which development consent under the PA 2008 is required
SoS	The Secretary of State – the decision maker for DCO applications and head of Government department. In this case the SoS for the Department for Energy Security and Net Zero
Water Connections Corridor	The route by which water will be supplied to and disposed from the Proposed Development
Work No.	Work number, a component of the Proposed Development, described at Schedule 1 to the Order
Works Plans	Plans showing the numbered works referred to in Schedule 1 to the Order and which together make up the Proposed Development

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1.0 EXECUTIVE SUMMARY

1.1.1 This section provides a summary of the other sections of this Statement of Reasons.

Section 2 – Introduction and Purpose and Structure of this Statement of Reasons

1.1.2 This Statement of Reasons has been prepared on behalf of H2 Teesside Limited and forms part of the Application for a Development Consent Order ('DCO') submitted under section 37 of the Planning Act 2008 ('PA 2008') in respect of the H2Teesside Project, otherwise referred to as the 'Proposed Development'.

1.1.3 The purpose of this document is to explain why it is necessary, proportionate and justifiable for the Applicant to seek powers of compulsory acquisition within the Application to acquire land, acquire or create rights over land, to extinguish or suspend rights over land, and to temporarily use land for the purposes of the Proposed Development, and why there is a compelling case in the public interest for the Applicant to be granted these powers.

1.1.4 This document has been prepared in accordance with the requirements of section 37(3)(d) of the PA 2008, Regulations 5(2)(h) and 5(2)(n) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended), and the 'Planning Act 2008: Guidance related to procedures for the compulsory acquisition of land' (DCLG, September 2013) ("the CA Guidance").

1.1.5 This Statement should be read alongside the other DCO Application documents that relate to the compulsory acquisition powers sought by the Applicant and the need for the Proposed Development.

Section 3 – Description of the Proposed Development

1.1.6 The Proposed Development comprises the construction and operation of an approximately 1.2-Gigawatt Thermal (GWth) Lower Heating Value (LHV) Carbon Capture (CC) enabled Hydrogen Production Facility (the 'Hydrogen Production Facility') located in Teesside, along with the pipeline infrastructure required to supply hydrogen (H₂) to offtakers (customers) and the necessary utility connections. Carbon dioxide captured by the Proposed Development will be transported by pipeline to the separately consented Northern Endurance Partnership ('NEP') infrastructure on the adjacent Net Zero Teesside site for high-pressure compression and offshore transport and underground storage.

Proposed Development Overview

1.1.7 The Hydrogen Production Facility (Hydrogen Production Facility, Work No. 1) is an approximately 1.2 GWth LHV (Phase 1, 600-Megawatt thermal (MWth) LHV and Phase 2, 600 MWth LHV) Carbon Capture enabled Hydrogen Production Facility located in the Teesside industrial cluster area (Work Nos. 1A.1 and 1A.2 respectively).

1.1.8 Work No. 1 also contains:

- Water connections and water and effluent treatment plants for Work Nos. 1A.1 and 1A.2 (Work No. 1B.1 and Work No. 1B.2 respectively);

- On-site, above ground pressurised hydrogen storage including high pressure compression and let down facilities (Work No. 1C);
- Administration, control room and stores (Work No. 1D);
- Connections and ancillary works in connection with Work Nos. 1A.1 and 1A.2, 1 and 1D (Work No. 1E.1 and Work No. 1E.2 respectively), including:
- if required, an Air Separation Unit (ASU) (located on the Main Site) to supply oxygen (O₂) and nitrogen (N₂) for the H₂ production process (Oxygen and Nitrogen, Work No 1F.1).

1.1.9 In addition to the Hydrogen Production Facility, the Proposed Development includes the following:

- a gas connection for the transport of natural gas to the Hydrogen Production Facility (Natural Gas Connection Corridor, Work No. 2A);
- associated Above Ground Installations (AGIs) connecting Work No. 2A to the National Transmission System (Work No. 2B);
- electrical connection works for the import of electricity from electricity transmission networks to Work Nos. 1E.1 and 1E.2 (Electrical Connection Corridor, Work No. 3);
- water supply connection works to provide cooling and make up water to Work nos. 1B.1 and 1B.2, comprising up to two water pipelines from the existing raw water main (Water Supply Corridor, Work No. 4);
- wastewater disposal works infrastructure (Wastewater Disposal Corridor, Work No. 5) comprising underground pipelines connecting to existing wastewater infrastructure;
- hydrogen distribution network comprising underground and overground pipelines to transport hydrogen gas to offtakers, and to existing Gas Transmission System and Gas Distribution Networks (Hydrogen Distribution Network, Work No. 6);
- carbon dioxide (CO₂) export pipeline and a connection to the Northern Endurance Partnership (NEP) CO₂ pipeline network (CO₂ Export Corridor, Work No. 7);
- –gas connections, being works for the transport of oxygen and nitrogen to Work Nos. 1E.1 and 1E.2, comprising underground and / or overground pipelines (as an alternative to the proposed ASU) to supply O₂ and N₂ for the H₂ production process, from an existing nearby third-party supplier (Oxygen and Nitrogen, Work No. 8);
- temporary construction and laydown areas (Laydown Areas, Work No. 9);
- access and highway Improvements, comprising works to create, improve, repair or use and maintain streets, roads, haul roads and access points (Access and Highway Improvements, Work No. 10)

- Use of land currently in agricultural use on the northern side of the A1185 adjacent to Cowpen Bewley Woodland Park as replacement for woodland lost in Work No 6 (Replacement Land, Work No. 11).

1.1.10 The Hydrogen Production Facility will be located on the 'Main Site'.

1.1.11 Demand for hydrogen produced by the Proposed Development will come from multiple end users, including supporting fuel switching from natural gas to hydrogen within process heat, steam raising and power generation applications, and therefore reducing carbon dioxide emissions from these industries.

Flexibility

1.1.12 At this stage in the design of the Proposed Development, there are still some options being considered for various components. Due to the 'First of a Kind' nature of the plant, the design of the Proposed Development incorporates a necessary degree of flexibility of the layout at the Main Site, as well as the routing of the hydrogen pipeline and other connections in order to respond to technology and contractor considerations. This will evolve as design and commercial agreements progress.

1.1.13 Chapter 4 of the ES specifies the design parameters assessed and these are secured by the Order (Document reference 4.1) including through Article 4 which provides that the Proposed Development must be situated within the areas specified on the Works Plans (Document reference 2.4). Schedule 16 of the Order sets out the maximum design parameters. A detailed design Requirement is contained within Schedule 2 of the Order.

Section 4 – The Proposed Development Site and the Order Land

1.1.14 The Proposed Development Site covers an area of approximately 508 hectares (ha) and is located primarily within the administrative boundaries of Redcar and Cleveland Borough Council (RCBC) and Stockton-on-Tees Borough Council (STBC). The Hydrogen Distribution Network (refer to Figure 4-4 in ES Volume II, Document reference 6.3) extends further north-west to also include land within the administrative boundary of Hartlepool Borough Council (HBC).

1.1.15 The Hydrogen Production Facility will be located at the Main Site within the Teesworks development site. The Main Site comprises approximately 86 ha of former industrial land that was used for steel production, including a mix of industrial buildings. As of March 2024, much of the site infrastructure including industrial buildings and overhead pipes have either been demolished or are 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.

Section 5 – Compulsory Acquisition Powers

1.1.16 The PA 2008 provides the statutory basis for a DCO including powers of compulsory acquisition.

1.1.17 Section 120 of the PA 2008 provides that an order granting development consent may make provision relating to, or to matters ancillary to, the development for which consent is granted. Schedule 5 to the PA 2008 lists the matters ancillary to the development, which includes the acquisition of land, compulsorily or by agreement, and the creation, suspension or extinguishment of, or interference with, interests in or rights over land, compulsorily or by agreement.

1.1.18 Section 122 of the PA 2008 provides that an order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State, in respect of the Application, is satisfied that the land is:

- required for the development to which the DCO relates;
- required to facilitate or is incidental to that development; or
- replacement land for commons, open spaces etc.

1.1.19 The Secretary of State must also be satisfied that there is a compelling case in the public interest for the inclusion of powers of compulsory acquisition in the Order.

Section 6 - Need for Compulsory Acquisition of Land and Rights

1.1.20 As noted above, under Section 122 of the PA 2008, a DCO which includes compulsory acquisition powers may be granted only if the conditions in Sections 122(2) and 122(3) are met. The conditions to be met are that:

- the land is required for the development to which the DCO relates or is required to facilitate or is incidental to the development (Section 122(2)) (see paragraph 0 onwards below); and
- there is a compelling case in the public interest for inclusion of powers of compulsory acquisition in the DCO (Section 122(3)). The Secretary of State must be persuaded that the public benefits from the compulsory acquisition will outweigh the private loss suffered by those whose land is to be acquired (see Sections 7 and 8 below).

1.1.21 The 'Guidance related to procedures for the compulsory acquisition of land' (the 'CA Guidance') expands on these conditions at paragraphs 11 and 13. Paragraphs 8 to 10 of the CA Guidance also set out a number of general considerations that the Applicant must demonstrate to the satisfaction of the Secretary of State when justifying an order authorising compulsory acquisition. These are as follows:

- that all reasonable alternatives to compulsory acquisition (including modifications to the Proposed Development) have been explored;
- that the proposed interference with the rights of those with an interest in the land is for a legitimate purpose and is necessary and proportionate;
- that the Applicant has a clear idea of how they intend to use the land which it is proposed to acquire;

- that there is a reasonable prospect of the requisite funds for the acquisition becoming available - see the Funding Statement (Document Reference 3.3); and
- that the purposes for which compulsory acquisition of land powers are included in the DCO are legitimate and are sufficient to justify interfering with the human rights of those with an interest in the land affected.

Need for Compulsory Acquisition of Land and Rights (Sections 122(2) and (3))

- 1.1.22 To ensure that the Proposed Development can be built, maintained and operated, and so that the Government's policies are met in relation to the timely provision of new low carbon hydrogen production capacity and its distribution, and meeting net zero carbon emissions targets for 2050, the Applicant requires the acquisition of a number of property interests in third-party ownership, and has therefore applied for the grant of powers to facilitate acquisition and/or creation of new rights and interests, and to extinguish/suspend rights over land.
- 1.1.23 There are four categories of land powers included in the Order (Document Ref. 4.1) – three of these are powers of compulsory acquisition of interests and the fourth is a power to occupy land temporarily. Each is introduced briefly below.

All Interests (Including Freehold)

- 1.1.24 The land over which compulsory powers are sought generally (and therefore including the freehold interest) is shown edged red and shaded pink on the Land Plans (Document Reference 2.2). In summary, the areas in which freehold acquisition is sought are:
- part of the Teesworks Site (part of the former Redcar Steel Works Site) which is the location for the proposed Hydrogen Production Facility (Work No. 1), as well as part of various connections to Work No. 1;
 - land required for the above ground installations (AGIs) which are part of Work No. 2 (Natural Gas Connection),
 - land required for the sub-stations (or AGIs) which are part of Work No. 3 (Electrical Connection Works), for the import of electricity from electricity transmission networks;
 - land required for the AGIs which are part of Work No. 6 (Hydrogen Distribution Network), to connect Work No. 6A to the gas grid and distribution networks, and to hydrogen offtakers (Work No. 6B);
 - land required for the AGIs which are part of Work No. 7 (Carbon Dioxide Export Pipeline), for the export of carbon dioxide; and
 - Replacement Land required in exchange for Lost Open Space (Work No. 11).
- 1.1.25 The Applicant has only included powers to compulsorily acquire the freehold interest in land where other powers (such as to acquire new rights or take temporary possession) would not be sufficient or appropriate to enable the

construction, operation or maintenance of the Proposed Development. Article 22 of the Order is relied upon in respect of this land.

New Rights

1.1.26 The land over which compulsory acquisition powers are sought to be able to create new rights is shown edged red and shaded blue on the Land Plans (Document Reference 2.2). In summary, these are the areas required for installation, construction, operation and maintenance of:

- the Natural Gas Connection (Work No. 2A);
- the Electrical Connection Corridor (Work No. 3);
- the Water Connections (Work Nos. 4 and 5);
- the Hydrogen Distribution Network – underground and overground pipelines (Work No. 6A);
- the CO2 Export Connection (Work No. 7A);
- the Other Gases Connections (Work No. 8); and
- the Access and Highway Works (Work No. 10, to the extent these are permanent).

1.1.27 Most of these areas over which new rights are sought include both the substantive works (such as a pipeline or cable) and, where necessary, routes along which the Applicant can gain access to the relevant connection corridors.

1.1.28 Article 25 of the Order is relied upon in respect of new rights. The purposes for which new rights can be sought are set out in Schedule 8 to the Order.

1.1.29 The Order also includes the power to acquire rights and impose restrictions for the benefit of statutory undertakers pursuant to Article 25.

Extinguishment / suspension of rights

1.1.30 In addition, the Applicant has included powers in the Order to ensure that easements, restrictions and other private rights identified as affecting the land can be extinguished or suspended, so as to facilitate the construction and operation of the Proposed Development without hindrance. In addition, there may be unknown rights, restrictions, easements or servitudes affecting that land which also need to be extinguished in order to facilitate the construction and operation of the Proposed Development. Articles 23 and 26 of the Order provide this power, which applies in relation to land in which compulsory acquisition or temporary possession are proposed.

Temporary use of land

1.1.31 The land in respect of which powers of temporary occupation are sought is shown edged red and shaded yellow on the Land Plans. Articles 32 and 33 of the Order are relied upon in respect of this land.

1.1.32 Article 32 permits temporary use in two ways:

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- Firstly, the land identified in Schedule 10 to the Order may only be temporarily possessed (i.e. the Applicant cannot acquire the land nor new rights over it), and possession can only be taken for the purposes set out in that Schedule for the particular plot; and
 - Secondly, Article 32 permits the Applicant to take temporary possession of any other part of the Order Land where it has not yet exercised powers of compulsory acquisition - this will allow it (for instance) to initially take temporary possession of the whole width of corridors required for pipeline or cable connections.
- 1.1.33 The Applicant has included specific powers to use land temporarily (i.e. that coloured yellow on the Land Plans) to construct the Proposed Development where it does not require any interest in the land on a permanent basis. These areas relate to:
- the temporary construction laydown areas (Work No. 9, to the extent these do not overlap with permanent works); and
 - some access and highway improvements (Work No. 10) and which will be used for the purposes of construction.
- 1.1.34 The Applicant has been seeking to acquire the relevant freehold interests, new rights and temporary use of land by private treaty, in order to ensure implementation of the Proposed Development. However, it has not yet been possible to acquire all of these by agreement. In addition, the Applicant requires certain matters to be suspended, overridden or extinguished within the Order Land so as to ensure there are no impediments to the construction, operation and maintenance of the Proposed Development.
- 1.1.35 In the absence of powers of compulsory acquisition, the Order Land may not be assembled, uncertainty will continue to prevail and the Applicant considers that their objectives and Government policy objectives would not be achieved.
- 1.1.36 Whilst seeking compulsory purchase powers, the Applicant will continue to seek to acquire the land, the temporary use of land, the rights and other interests by agreement, as well as secure the removal of matters affecting the Order Land that may impede the Proposed Development, wherever possible. This approach of making the application for powers of compulsory acquisition in the Application for the DCO and, in parallel, conducting negotiations to acquire land by agreement, accords with paragraph 26 of the CA Guidance.

Use of the Order Land and Status of Negotiations

- 1.1.37 The purpose for which land is subject to the proposed powers of compulsory acquisition and to possess land temporarily is summarised in the Schedule of Negotiations and Powers Sought (Document Reference 3.4).
- 1.1.38 The Schedule of Negotiations and Powers Sought also sets out the position in terms of the Applicant's negotiations to acquire interests in land or to take possession of land required for the Proposed Development by agreement. The position in relation

to statutory undertakers' apparatus within the Order Limits is also set out in the Schedule of Negotiations and Powers Sought (and is covered more generally in section 9 of this Statement of Reasons.

Alternatives to Compulsory Acquisition

- 1.1.39 The Proposed Development requires the acquisition of land and the acquisition of / creation of rights to secure the land and rights needed to build and operate it. Accordingly, there is no alternative but to seek to acquire land, the temporary use of land and the acquisition of / creation of rights to allow the Proposed Development to be constructed, operated and maintained.
- 1.1.40 It is considered that the 'Do Nothing' scenario is not appropriate given the established national need for low carbon hydrogen production and distribution and the urgent need to transition to a low carbon economy and meet Net Zero 2050 commitments (see further below). The other key disadvantage of the 'Do Nothing' scenario would be the lack of additional investment in the local economy.
- 1.1.41 The Applicant has considered a number of alternatives in relation to the Hydrogen Distribution Network and Connection Corridor Routings. These have been refined and flexibility has been retained where design and landowner/stakeholder negotiations are progressing. Where possible, the Proposed Development has sought to utilise existing pipeline corridors and connections to reduce construction impacts and the need for new apparatus corridors to be created.
- 1.1.42 The Main Site was selected for a number of reasons and taking into account National Policy Statements EN-1, EN-4 and EN-5.
- 1.1.43 The Applicant has undertaken a clear process to identify an appropriate site (with respect to the Main Site), and an appropriate form and route for the relevant linear elements of the Proposed Development), and has considered alternatives in doing so. None of the alternatives would provide the compelling benefits that the Proposed Development will, or would involve additional impacts or disadvantages in terms of land take, environmental, technical or other considerations.
- 1.1.44 The Applicant is seeking to acquire the necessary land and rights by agreement. Whilst it will continue to seek to acquire the land and rights by voluntary agreement, it requires the powers of compulsory acquisition sought in order to provide certainty that it will have all the land required to construct and operate the Proposed Development, in order to realise its very significant public benefits.

Section 7 - Justification for the Use of Powers of Compulsory Acquisition

The Compelling Case

- 1.1.45 A Planning Statement (Document Ref. 5.2) and a Project Need Statement (Document Ref. 5.3) accompany the Application. These explain how the Proposed Development:
- meets an urgent need for new low carbon hydrogen production;

- is an essential part of decarbonising the power and industrial sectors, by providing the development of a low carbon hydrogen distribution network that enables decarbonisation of industrial emitters, helping the UK meet net zero targets;
- is a form of economic development that is suitable in its local context;
- minimises or mitigates adverse impacts to an acceptable degree;
- is compliant with National Policy Statements ('NPS') EN-1, EN-4 and EN-5 and in accordance with other decision-making factors specified in Section 104 of the PA 2008.

1.1.46 The Planning Statement and Project Need Statement accompanying the Application provide an extensive review of these matters.

The Need for the Proposed Development

1.1.47 The Proposed Development will support the decarbonisation of UK-produced natural gas by converting it to low carbon hydrogen in Teesside for use in industrial applications, thus helping to achieve national targets in relation to net zero. It will also contribute to restoring manufacturing jobs in the Tees Valley. The Proposed Development will export carbon dioxide (CO₂) to the Northern Endurance Partnership (NEP) offshore storage facility via NEP infrastructure on the adjacent Net Zero Teesside (NZE) site, including the high-pressure compression facility and the off-shore CO₂ export pipeline. Development consent was granted for the NZE project on 16 February 2024.

1.1.48 The need that exists for new low carbon hydrogen production and distribution is confirmed in the Energy NPSs, designated by the Secretary of State for BEIS (then the Department of Energy and Climate Change) in January 2024. These NPSs form the primary basis for decisions by the Secretary of State on nationally significant energy infrastructure that falls to be considered under the PA 2008. The NPSs of most direct relevance to the Proposed Development include EN-1, EN-4 and EN-5.

1.1.49 The Applicant considers that there is a clear and compelling national need for the Proposed Development as:

- the Proposed Development will make a major contribution toward addressing the need that exists for the shift to clean energy generation and greater energy efficiency which provides the most effective route to ensuring both climate and energy security;
- the Applicant has selected the Site on which to construct and operate the Proposed Development for technical, environmental and commercial reasons; and
- it will provide social and economic benefits to the local area to strengthen Teesside's development into the UK's leading hydrogen hub, creating new high-

quality jobs, supporting local education and skills development and kick-starting a highly skilled UK-based hydrogen supply chain.

Section 8 – Policy Support

- 1.1.50 Development consent is required for the Proposed Development as it is the subject of a Direction dated 22 December 2022 made by the SoS under Sections 35(1) and 35ZA of the PA 2008.
- 1.1.51 Under the PA 2008 regime, the policy framework for examining and determining applications for development consent is provided by National Policy Statements ('NPSs'). The NPSs are the primary policy used by the relevant SoS to examine and determine DCO applications.
- 1.1.52 Revised NPSs for energy infrastructure were published by the Government on 22 November 2023 and came into force (were designated) on 17 January 2024. The revised NPSs are therefore relevant policy for applications for development consent submitted and accepted for examination following their designation.
- 1.1.53 The following revised energy NPSs are considered to be of relevance to the Proposed Development:
- the Overarching NPS for Energy (EN-1) (DESNZ, 2023);
 - the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (DESNZ, 2023); and
 - the NPS for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023).
- 1.1.54 Where a relevant NPS has been designated, Section 104 of the PA 2008 requires the SoS to determine DCO applications in accordance with the relevant NPSs and appropriate marine policy documents (if any) having regard to: any local impact report produced by the relevant Local Planning Authority (LPA); any matters prescribed in relation to development of the description to which the application relates; and any other matters which the SoS thinks are both 'important and relevant' to their decision, unless this would:
- lead to the UK being in breach of its international obligations;
 - lead to the SoS being in breach of any statutory duty that applies to the SoS;
 - be unlawful by virtue of any enactment;
 - result in the adverse impacts of the development outweighing the benefits; or
 - result in any condition that is prescribed for deciding an application not being in accordance with the NPS.
- 1.1.55 As noted above, Section 104 of the PA 2008 sets out the matters that the SoS must have regard to in determining applications for NSIPs, which can include any other matters which the SoS thinks are "*important and relevant*" to their decision.

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- 1.1.56 In the case of the Proposed Development, the Applicant considers that other matters that are important and relevant to the SoS's decision include recent UK Government energy and climate change policy, notably the Ten Point Plan; the EWP; the Net Zero Strategy and the British Energy Security Strategy, amongst others. These documents set out important Government objectives for the production and supply of hydrogen to help decarbonise industry (in order to achieve Net Zero by 2050) and are considered in detail in Section 8 below.
- 1.1.57 Other matters that the SoS may consider important and relevant include the policies contained within the NPPF and local development plan policy.

Section 9 - Special Considerations

Crown Land

- 1.1.58 There are Crown interests within the Order Limits. The Order (Document Ref. 4.1) includes the standard article providing that the Order does not prejudicially affect any estate (etc.) of the Crown, and that the undertaker may not enter on or take any Crown land other than with the consent of the appropriate authority (article 42).
- 1.1.59 The Applicant has been negotiating with the Crown Estate Commissioners in order to secure the rights and access necessary to carry out the relevant parts of Work No. 6A.1 and to obtain the consent of the Crown to the inclusion of provisions applying in relation to Crown land (as required by section 135 of the PA 2008).

Special Category Land – Open Space Land

- 1.1.60 Section 131 of the PA 2008 applies to the compulsory acquisition of land forming part of a common, open space or fuel or field garden allotment, except where section 132 applies (see further below). There are no commons or allotments within the Order Limits.
- 1.1.61 Section 131(4) provides that special parliamentary procedure is not required if replacement land has been or will be given in exchange for the order land (i.e. the open space), and the replacement land has been or will be vested in the prospective seller and subject to the same rights, trusts and incidents as attach to the order land.
- 1.1.62 For the purposes of Section 131, 'replacement land' means:
"land which is not less in area than the order land and which is no less advantageous to the persons, if any, entitled to rights of common or other rights, and to the public".
- 1.1.63 The Applicant is seeking the application of Section 131(4) in respect of part of the open space at Cowpen Bewley Woodland Park.
- 1.1.64 Section 132(2) of the PA 2008 states that the Order, to the extent that it authorises the compulsory acquisition of a right over open space land by the creation of a new right over land, will be subject to special parliamentary procedure unless an exception applies. Section 132(4) provides that special parliamentary procedure is

not required if replacement land has been or will be given in exchange for the order land (i.e. the open space over which new rights are sought), and the replacement land has been or will be vested in the prospective seller and subject to the same rights, trusts and incidents as attach to the order land.

1.1.65 For the purposes of Section 132, ‘replacement land’ means

“land which will be adequate to compensate the following persons for the disadvantages which result from the compulsory acquisition of the order right—

(a) the persons in whom the order land is vested,

(b) the persons, if any, entitled to rights of common or other rights over the order land, and

(c) the public.”

1.1.66 The Applicant is seeking the application of Section 132(4) in respect of part of the open space at Cowpen Bewley Woodland Park, as set below.

1.1.67 The total area of the Lost Open Space is 1.945 hectares, split between the plots in which all interests are to be acquired (1.172 hectares) and the plots in which new rights are to be acquired (0.773 hectares).

1.1.68 The total area of the Replacement Land is 1.964 hectares – this is in excess of the Lost Open Space, and therefore complies with the requirement in S131 that the replacement land is not less in area than the relevant part of the Lost Open Space (to which S131 applies).

1.1.69 Section 132(3) provides that special parliamentary procedure is not required if the Order Land, when burdened with the rights under the Order, will be “no less advantageous than it was before” to the following persons:

- the persons in whom it is vested;
- other persons, if any, entitled to rights of common or other rights; and
- the public.

1.1.70 The Applicant is seeking the application of Section 132(3) in respect of the open space at Coatham Marsh. No permanent surface installation works will be required within the Coatham Marsh Open Space Land. The physical appearance of the Coatham Marsh Open Space Land will be unaffected, and the use of the Coatham Marsh Open Space Land for recreation will carry on uninterrupted except for temporary restrictions over limited areas of the open space land during construction.

1.1.71 The Applicant is also seeking the application of Section 132(3) in respect of part of the open space at Cowpen Bewley Woodland Park, in particular access tracks which will be used for the purposes of access for a limited period during construction.

1.1.72 The Applicant therefore considers that the test under section 132(3) of the PA 2008 is satisfied. The Coatham Marsh and Cowpen Bewley open space land, when

burdened with the relevant rights, will not be any less advantageous to persons in whom it is vested, other persons, if any, if entitled to rights of common or other rights, and to the public.

Statutory Undertakers

- 1.1.73 The Applicant has identified a number of statutory undertakers that own or operate land or apparatus within the Order Limits.
- 1.1.74 The Order (Document Reference 4.1) includes both protective provisions in respect of relevant types of statutory undertakers and bespoke protective provisions for some statutory undertakers (see article 34 and Schedule 12), and the Applicant is seeking to agree the form of protective provisions with the relevant statutory undertakers, and other parties with apparatus.

Section 10 – Other Consents and Licences

- 1.1.75 The Applicant requires various other consents, as well as a DCO, in order to build and operate the Proposed Development. The Other Consents and Licences Statement (Document Reference 5.7) sets out the additional consents required and when they will be applied for. These include environmental permits in respect of the operation of the Hydrogen Production Facility and potentially in relation to activities affecting flood risk and discharge of surface water, hazardous substance consent, COMAH licence, greenhouse gas permit and gas transporter licence.
- 1.1.76 The Applicant is not aware of any reason why these and other consents required would not be granted and therefore does not consider that they represent an impediment to the Proposed Development proceeding.
- 1.1.77 Carbon dioxide captured by the Proposed Development will be transported by pipeline (Work No. 7) to the separate Northern Endurance Partnership infrastructure on the adjacent Net Zero Teesside site, for high-pressure compression and onward transport via offshore pipeline and underground storage. The DCO for the NZT Project was granted on 16 February 2024.

Section 11 – Human Rights

- 1.1.78 In preparing the Application, the Applicant has considered the potential infringement of Convention rights in consequence of the inclusion of compulsory acquisition powers within the Order. The Applicant considers that there would be very significant public benefits arising from the making of the Order for the Proposed Development.
- 1.1.79 Those benefits can only be realised if the Order includes compulsory acquisition powers, and the purpose for which the land is sought (to build and operate the Proposed Development) is legitimate. The Applicant considers, on balance, that the significant public benefits outweigh the effects on persons who own interests in relevant land or who may be affected by the Proposed Development.
- 1.1.80 The Applicant considers that there is a compelling case in the public interest for the exercise of such powers of compulsory acquisition.

1.1.81 For those affected by expropriation or dispossession, compensation is payable in accordance with the statutory compensation code. The Funding Statement (Document Reference 3.3) confirms the availability of funds to meet these liabilities.

Section 12 – Further Information

1.1.82 Owners and occupiers of property affected by the Order who wish to negotiate a sale or discuss matters of compensation should contact Joshua Peat of Dalcour Maclaren (by telephone 07768023090 / 01623203027 or by email joshua.peat@dalcourmaclaren.com). .

1.1.83 Provision is made by statute for compensation for the compulsory acquisition of land. Helpful information is given in the series of booklets published by the Department for Levelling Up, Housing and Communities entitled "Compulsory Purchase and Compensation". Copies of these booklets are obtainable, free of charge, from: <https://www.gov.uk/government/collections/compulsory-purchase-system-guidance>.

2.0 INTRODUCTION

Background

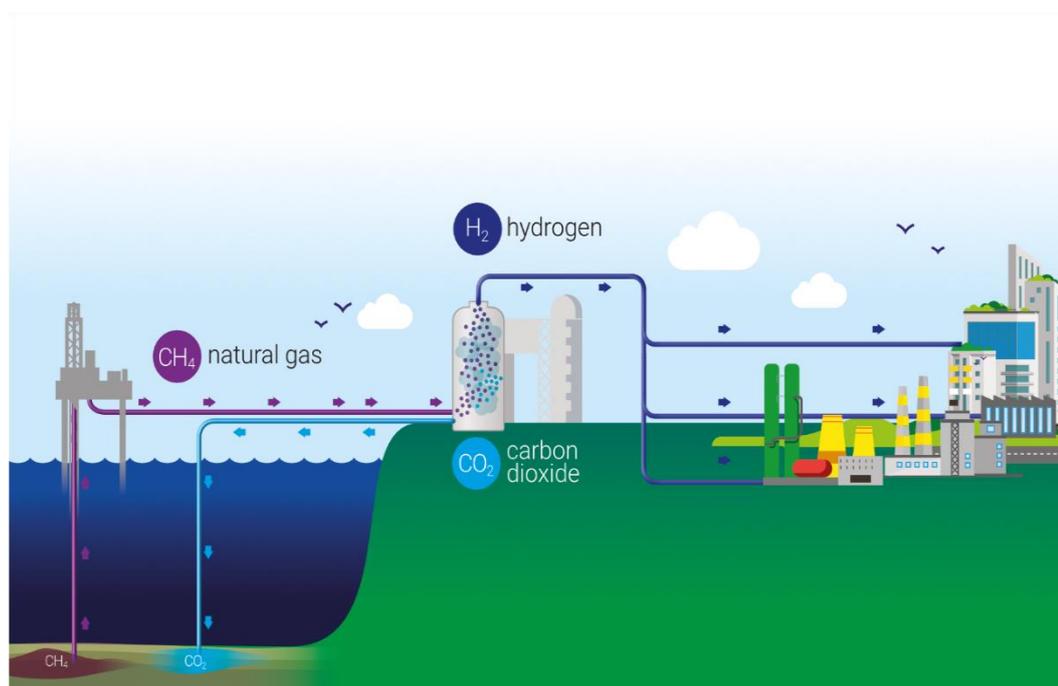
- 2.1.1 This Statement of Reasons (Document Ref. 3.2) has been prepared on behalf of H2 Teesside Limited. It forms part of the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the 'SoS') for the Department of Energy Security and Net Zero ('DESNZ'), under Section 37 of 'The Planning Act 2008' (the 'PA 2008') in respect of the H2Teesside Project.
- 2.1.2 The Applicant is H2 Teesside Limited, a bp company. H2 Teesside Limited will be the lead developer of the Proposed Development and bp will be appointed as the operator of the Proposed Development. The Proposed Development will support the decarbonisation of UK-produced natural gas by converting it to low carbon hydrogen in Teesside for use in industrial applications, thus helping to achieve national targets in relation to net zero. It will also contribute to restoring manufacturing jobs in the Tees Valley. The Proposed Development will export carbon dioxide (CO₂) to the Northern Endurance Partnership ('NEP') offshore storage facility via NEP infrastructure on the adjacent Net Zero Teesside ('NZN') site, including the high-pressure compression facility and the CO₂ export pipeline.
- 2.1.3 The Applicant is seeking development consent for the construction, operation and maintenance of the H2Teesside Project, including associated development (together the 'Proposed Development') on land within the boroughs of Redcar and Cleveland and Stockton-on-Tees, Teesside and within the borough of Hartlepool, County Durham.
- 2.1.4 Development consent is required for the Proposed Development as it is the subject of a Direction dated 22 December 2022 made by the SoS under Sections 35(1) and 35ZA of the same PA 2008. The DCO, if made by the SoS, would be known as 'The H2 Teesside Order' (the 'Order').

Overview of the Proposed Development

- 2.1.5 The Proposed Development will use natural gas to produce hydrogen (known as 'blue' hydrogen) with the carbon dioxide (CO₂) created during the hydrogen production process being captured and compressed for onward transportation and storage, under agreement with the Northern Endurance Partnership (the 'NEP'). NEP will store the CO₂ securely below ground within the Endurance storage site and other nearby CO₂ stores that NEP holds CO₂ storage licences for. These are located approximately 145 kilometres ('km') offshore from Teesside under the North Sea.
- 2.1.6 The onshore elements of the NEP infrastructure on Teesside are part of the Net Zero Teesside ('NZN') Project and have been the subject of an application for development consent. The SoS for DESNZ granted the NZN development consent application on 16 February 2024. The NZN DCO came into force on 11 March 2024.
- 2.1.7 The Proposed Development and NEP form part of the East Coast Cluster ('ECC'). The ECC has been selected as one of the first two carbon capture, usage and storage ('CCUS') clusters to be taken forward by the UK Government. The ECC has

the potential to remove almost 50% of the UK's total industrial clusters carbon dioxide emissions, protect thousands of jobs and establish the region as a globally competitive climate friendly hub for industry and innovation. The ECC will include a diverse mix of low-carbon projects, including industrial carbon capture, low-carbon hydrogen production, negative emissions power, and power with carbon capture. In March 2023, the Proposed Development was selected by DESNZ as one of the first three projects to connect to the ECC.

- 2.1.8 The low-carbon hydrogen produced by the Proposed Development will be supplied via a new hydrogen distribution network to existing businesses on Teesside. By replacing the use of natural gas the Proposed Development will help existing heavy industry on Teesside reduce its carbon dioxide emissions, consistent with the Government's objective to decarbonise the UK economy and achieve its legally binding target of net zero greenhouse gas emissions by 2050.
- 2.1.9 The Proposed Development will be one of the UK's largest blue hydrogen production facilities with a capacity of up to 1.2 gigawatts ('GW') thermal, representing more than 10% of the Government's hydrogen production target of 10 gigawatts by 2030. This equates to the production of approximately 160,000 tonnes of low carbon hydrogen per annum, with up to two million tonnes of CO₂ being captured and stored each year.
- 2.1.10 The infographic below provides an overview of the 'blue' hydrogen processes.



Proposed Development Description

- 2.1.11 The Proposed Development comprises the following main elements:
- Work Number ('No.') 1 – a hydrogen production facility of up to approximately 1.2 Gigawatts Thermal ('GWth') lower heating value, including two carbon capture enabled hydrogen units each of 600 Megawatts Thermal ('MWth'),

including a water and effluent treatment plant; above ground hydrogen storage; administration, control room and stores; gas and power connections, above ground installations and ancillary works.

- Work No. 2 – a natural gas supply connection for the transport of natural gas to the hydrogen production facility.
 - Work No. 3 – electrical connection works for the import of electricity from the electricity transmission network to the hydrogen production facility.
 - Work No. 4 – water supply connection works to provide cooling and make-up water to the hydrogen production facility.
 - Work No. 5 – wastewater disposal works in connection with the hydrogen production facility.
 - Work No. 6 – a hydrogen distribution network, for the transport of hydrogen gas from Work No. 1, comprising underground and overground pipelines to supply hydrogen to the above ground storage and offtakers across Teesside. The hydrogen pipelines will run up to tie-in points with the relevant offtaker (likely to be, but not necessarily having to be) at the offtakers' site boundaries. Any works beyond this tie-in point will be progressed separately by the relevant offtaker.
 - Work No. 7 – a high pressure carbon dioxide export pipeline for the export of the captured CO₂ to the adjacent NEP infrastructure.
 - Work No. 8 – gas connections being works for the transport of oxygen and nitrogen to the hydrogen production facility.
 - Work No. 9 – temporary construction and laydown areas and contractor compounds.
 - Work No. 10 – access and highways improvements.
 - Work No. 11 – replacement land relating to Work No. 6.
- 2.1.12 There will also be further development works associated with the above elements of the Proposed Development.
- 2.1.13 It is envisaged that the hydrogen production facility will be constructed in two phases.
- 2.1.14 A description of the elements of the Proposed Development and the Works Nos. is set out at Schedule 1 of the Order (Application Document Ref. 4.1). The ancillary and further development required in connection with and subsidiary to the above elements of the Proposed Development is also detailed at Schedule 1 of the Order.
- 2.1.15 A more detailed description of the Proposed Development and how it will operate is provided at Chapter 4 'Proposed Development' in Environmental Statement ('ES') Volume I (Document Ref. 6.2) and the areas within which each of the main elements of the Proposed Development are to be built are denoted by the coloured and hatched areas on the Works Plans (Document Ref. 2.4).

The Proposed Development Site

- 2.1.16 The Proposed Development Site (the 'Site') lies within the administrative boundaries of the boroughs of Redcar and Cleveland south of the River Tees and Stockton-on-Tees north of the Tees on Teesside and within the borough of Hartlepool in County Durham, also north of the Tees.
- 2.1.17 The Site extends to a total area of approximately 508 hectares ('ha').
- 2.1.18 The hydrogen production facility and its ancillary development (also referred to as the 'Main Site'), including its carbon capture and compression facilities, will be located on part of the Foundry Site, which forms part of Teesworks, within the borough of Redcar and Cleveland and which is adjacent to NEP infrastructure. Teesworks is a major brownfield industrial site and Freeport, part of which was formerly occupied by the Redcar Steel Works.
- 2.1.19 The CO₂ captured from the hydrogen production processes will be transported by pipeline to the NEP infrastructure for onward transport and storage within the Endurance storage site. The Main Site extends to 86 ha.
- 2.1.20 The natural gas, electrical and water connections will be located to the east and south-east of the Main Site within the borough of Redcar and Cleveland. The hydrogen distribution network will extend either side of the River Tees to several potential industrial offtakers, including north of the Tees into the boroughs of Stockton-on-Tees and Hartlepool.
- 2.1.21 A more detailed description of the Site and its surroundings is provided at Chapter 3 'Description of the Existing Area' in the ES Volume I (Document Ref. 6.2).

The Purpose and Structure of this Document

- 2.1.22 The purpose of this document is to explain why it is necessary, proportionate and justifiable for the Applicant to seek powers of compulsory acquisition within the Application to acquire land, acquire or create rights over land, to extinguish or suspend rights over land, and to temporarily use land for the purposes of the Proposed Development, and why there is a compelling case in the public interest for the Applicant to be granted these powers.
- 2.1.23 This document has been prepared in accordance with the requirements of section 37(3)(d) of the PA 2008, Regulations 5(2)(h) and 5(2)(n) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended), and the 'Planning Act 2008: Guidance related to procedures for the compulsory acquisition of land' (DCLG, September 2013) ('the CA Guidance').
- 2.1.24 This Statement should be read alongside the other DCO application documents that relate to the compulsory acquisition powers sought by the Applicant and the need for the Proposed Development, including:
- The Order (Document Reference 4.1);
 - Explanatory Memorandum (Document Reference 4.2);
 - Book of Reference (Document Reference 3.1);

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- Funding Statement (Document Reference 3.3);
 - Schedule of Negotiations and Powers Sought (Document Reference 3.4);
 - Land Plans (Document Reference 2.2);
 - Special Category Land and Crown Land Plans (Document Reference 2.3);
 - Works Plans (Document Reference 2.4);
 - Planning Statement (Document Reference 5.2);
 - Need Statement (Document Reference 5.3);
 - Design and Access Statement (Document Reference 5.4); and
 - Other Consents and Licences Statement (Document Reference 5.7).

2.1.25 The document is structured as follows:

- Section 3 – Description of the Proposed Development;
- Section 4 – The Proposed Development Site and the Order Land;
- Section 5 – Compulsory Acquisition Powers;
- Section 6 - Need for Compulsory Acquisition of Land and Rights;
- Section 7 - Justification for the Use of Powers of Compulsory Acquisition;
- Section 8 – Policy Support;
- Section 9 - Special Considerations;
- Section 10 – Other Consents and Licences;
- Section 11 – Human Rights;
- Section 12 – Further Information; and
- Section 13 – Conclusion.

3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1.1 This section provides information on the main parts of the Proposed Development. The development which the DCO permits is set out in Schedule 1 of the Order (Document Reference 4.1) and is referred to as the 'authorised development' in that document. The Works Plans (Document Reference 2.4) show the areas in which the parts of the Proposed Development may be constructed.

3.1.2 The Proposed Development comprises the construction, operation (including maintenance where relevant) and decommissioning of an approximately 1.2-Gigawatt Thermal (GWth) Lower Heating Value (LHV) Carbon Capture (CC) enabled Hydrogen Production Facility (the 'Hydrogen Production Facility') located in Teesside, along with the pipeline infrastructure required to supply hydrogen (H₂) to off-takers (customers) and the necessary utility connections. Carbon dioxide captured by the Proposed Development will be transported by pipeline to the separately consented Northern Endurance Partnership ('NEP') infrastructure on the adjacent Net Zero Teesside site for high-pressure compression and offshore transport and underground storage.

Proposed Development Overview

3.1.3 The Hydrogen Production Facility (Hydrogen Production Facility, Work No. 1) is an approximately 1.2 GWth LHV (Phase 1, 600-Megawatt thermal (MWth) LHV and Phase 2, 600 MWth LHV) Carbon Capture enabled Hydrogen Production Facility located in the Teesside industrial cluster area (Work Nos. 1A.1 and 1A.2 respectively).

3.1.4 Work No. 1 also contains:

- Water connections and water and effluent treatment plants for Work Nos. 1A.1 and 1A.2 (Work No. 1B.1 and Work No. 1B.2 respectively), each comprising :
 - process water treatment plant;
 - demineralisation plant;
 - bio-treatment plant;
 - effluent treatment plant; and
 - water networks, pipework, cables, racks, infrastructure, instrumentation and utilities.
- On-site, above ground pressurised hydrogen storage including high pressure compression and let down facilities (Work No. 1C);
- Administration, control room and stores (Work No. 1D);
- Connections and ancillary works in connection with Work Nos. 1A.1 and 1A.2, 1 and 1D (Work No. 1E.1 and Work No. 1E.2 respectively), including:
 - above ground installations;
 - ancillary plant, buildings, enclosures and structures;
 - pipework, pipe runs and pipe racks;
 - firefighting equipment, buildings and distribution pipework;

- lubrication oils storage facilities;
- permanent plant laydown area for operation and maintenance activities;
- flare;
- chemical storage and workshops; and
- mechanical, electrical, gas, telecommunications and water networks, pipework, cables, racks, infrastructure, instrumentation and utilities, including connections between Work Nos. 1A.1, 1A.2 and 1C and parts of Work Nos. (2, 3, 6, 7 and 8) (see below); and

3.1.5 The proposed capture technology uses an amine-based solvent to absorb carbon dioxide produced by the hydrogen production process. This process is also known as ‘pre-combustion amine-based absorption regeneration’. The design capture rate will be included in the Environmental Permit that will be required to operate the Proposed Development. The Hydrogen Production Facility will connect via the short Carbon Dioxide Export Corridor to the NEP compression and pipeline infrastructure on the adjacent Net Zero Teesside (NZN) site. The Proposed Development is estimated to have a capacity to export approximately 1.4 megatonnes (Mt) of dehydrated and compressed CO₂ per year per phase, i.e. approximately 2.8 Mt/year once both phases are operational (100% utilisation) to NEP for offshore underground storage. No temporary carbon dioxide storage is required on site.

3.1.6 In addition to the Hydrogen Production Facility, the Proposed Development includes the following:

- a gas connection for the transport of natural gas to the Hydrogen Production Facility (Natural Gas Connection Corridor, Work No. 2A);
- associated Above Ground Installations (AGIs) connecting Work No. 2A to the National Transmission System (Work No. 2B) including:
 - a compound for National Grid Gas plc’s apparatus;
 - compounds for the undertaker’s apparatus;
- electrical connection works for the import of electricity from electricity transmission networks to Work Nos. 1E.1 and 1E.2 (Electrical Connection Corridor, Work No. 3);
- water supply connection works to provide cooling and make up water to Work nos. 1B.1 and 1B.2, comprising up to two water pipelines from the existing raw water main (Water Supply Corridor, Work No. 4);
- wastewater disposal works infrastructure (Wastewater Disposal Corridor, Work No. 5) comprising underground pipelines connecting to existing wastewater infrastructure;
- hydrogen distribution network comprising underground and overground pipelines to transport hydrogen gas to offtakers, and to existing Gas Transmission

System and Gas Distribution Networks (Hydrogen Distribution Network, Work No. 6);

- carbon dioxide (CO₂) export pipeline and a connection to the Northern Endurance Partnership (NEP) CO₂ pipeline network (CO₂ Export Corridor, Work No. 7), including:
 - Work No. 7A - an overground and underground pipeline and associated power and fibre-optic cables; and
 - Work No. 7B – above ground installation connecting Work No. 7A with NEP carbon dioxide pipeline network;
- gas connections, being works for the transport of oxygen and nitrogen to Work Nos. 1E.1 and 1E.2, comprising underground and / or overground pipelines (as an alternative to the proposed ASU) to supply O₂ and N₂ for the H₂ production process, from an existing nearby third-party supplier (Oxygen and Nitrogen, Work No. 8);
- temporary construction and laydown areas, comprising hardstanding, laydown and open storage areas, contractor compounds and construction staff welfare facilities, gatehouse and weighbridge, vehicle parking and cycle storage facilities, internal roads and pedestrian and cycle routes, security fencing and gates, external lighting including lighting columns, and, closed circuit television cameras and columns (Laydown Areas, Work No. 9);
- access and highway Improvements, comprising works to create, improve, repair or use and maintain streets, roads, haul roads and access points (Access and Highway Improvements, Work No. 10)
- Use of land currently in agricultural use on the northern side of the A1185 adjacent to Cowpen Bewley Woodland Park as replacement for woodland lost in Work No 6 (Replacement Land, Work No. 11);

3.1.7 The Hydrogen Production Facility will be located on the 'Main Site'.

3.1.8 Demand for hydrogen produced by the Proposed Development will come from multiple end users, including supporting fuel switching from natural gas to hydrogen within process heat, steam raising and power generation applications, and therefore reducing carbon dioxide emissions from these industries.

Flexibility

3.1.9 At this stage in the design of the Proposed Development, there are still some options being considered for various components. Due to the 'First of a Kind' nature of the plant, the design of the Proposed Development incorporates a necessary degree of flexibility of the layout at the Main Site, as well as the routing of the hydrogen pipeline and other connections in order to respond to technology and contractor considerations. This will evolve as design and commercial agreements progress.

3.1.10 Chapter 4 of the ES specifies the design parameters assessed and these are secured by the Order (Document reference 4.1) including through Article 4 which provides

that the Proposed Development must be situated within the areas specified on the Works Plans (Document reference 2.4). Schedule 16 of the Order sets out the maximum design parameters. A detailed design Requirement is contained within Schedule 2 of the Order.

- 3.1.11 The following sections describe the Proposed Development in more detail and provide a brief description of optionality still being considered by the Applicant for each element and the justification for this.

Components of the Proposed Development

Hydrogen Production Facility

- 3.1.12 The Hydrogen Production Facility will be designed taking account of Best Available Techniques (BAT) as set out in the UK Government's Guidance on Emerging Techniques for Hydrogen Production with Carbon Capture. There is currently no guidance on BAT for hydrogen production with carbon capture. The design will take into account BAT as set out in existing BREFs and follow Article 14(6) of the Industrial Emissions Directive (IED).
- 3.1.13 The Hydrogen Production Facility will utilise natural gas as the feedstock. The natural gas will be converted to a synthesis gas (syngas) over a catalyst in a Gas Heated Reformer (GHR) - Autothermal Reformer (ATR) combination process that recovers most of the heat and hence produces minimal amount of steam. The steam demand is supported by a continuously operating auxiliary boiler. Electrical power will be imported from the national electricity grid, as discussed below. There will be no electricity generation as part of the Proposed Development.
- 3.1.14 The Proposed Development will utilise Johnson Matthey's (JM's) Low Carbon Hydrogen (LCH) blue hydrogen technology which surpasses the efficiency of the conventional ATR thereby requiring comparatively lower natural gas feed to achieve the design hydrogen export capacity.
- 3.1.15 Although the syngas from the GHR – ATR combination process is rich in hydrogen, it also contains high concentrations of carbon monoxide (CO). Therefore, this syngas will be further reacted in water-gas shift reactors to convert the carbon monoxide using steam into hydrogen and carbon dioxide. The low-carbon hydrogen rich stream will be purified to >98 purity mol% H₂ and compressed and conditioned before being exported to offtakers located in the Teesside region via the proposed Hydrogen Distribution Network.
- 3.1.16 The carbon dioxide produced will be removed from the gas via contact with an amine-based solvent, which will absorb (capture) the carbon dioxide. The solvent

¹ Molar percentage (mol%) represents the proportion of a specific component in a mixture in terms of the number of moles of that component per 100 total moles of the mixture. This level of purity implies that out of every 100 moles of the substance, 98 moles are hydrogen molecules.

will then be further regenerated to yield a carbon dioxide stream that will be compressed to medium pressure, dehydrated, and then exported to the NEP compression infrastructure on the NZT site to the east of the Main Site.

- 3.1.17 In the event that venting of carbon dioxide from carbon capture units is required during maintenance or repair, it shall be discharged to atmosphere to a safe location through a dedicated vent stack.

Production Capacity

- 3.1.18 Hydrogen production is expected to increase during the initial 12 to 18 months of operation in line with increasing offtaker demand. The peak hydrogen export rate for each phase is expected to be 600 MWth LHV (or approximately 22.2 tonnes/hr at 98% H₂) with the associated peak carbon dioxide export rate being around 160,000 kg/hr. For Phases 1 and 2 in combination this equates to approximately 1.2 GWth LHV (44.35 tonnes/hr) peak hydrogen production and export and around 320,000 kg/hr carbon dioxide export.

- 3.1.19 Once Phase 1 is commissioned and operational, the Hydrogen Production Facility will be designed to operate twenty-four hours per day, seven days per week (including when Phase 2 is under construction, commissioned and in operation) until decommissioning, with brief exceptions for planned outages such as for maintenance and repair.

Process Infrastructure

- 3.1.20 An outline description of the process infrastructure required for the operation of the Hydrogen Production Facility is presented below:

- a new Above Ground Installation (AGI) on the Main Site to receive natural gas which is common to both Phase 1 and Phase 2 (see description of Work No. 2B above);
- a new AGI on the Main Site at the point of export of carbon dioxide which is common for both Phase 1 and Phase 2;
- a Hydrogen Production Unit in each phase where the main process of reforming occurs. Reforming is the reaction of hydrocarbons with water (steam) to produce hydrogen.

- 3.1.21 In addition, the following ancillary infrastructure may be required for the Proposed Development:

- ASUs for the compression and separation of air, which is passed through a rectification column to produce oxygen for use in the GHR – ATR combination process. It also includes provision of liquid oxygen and liquid nitrogen storage on site for back up. As an alternative, options to utilise oxygen and nitrogen from a nearby supplier which would remove the requirement for an onsite ASU and onsite liquid storage are being investigated. This is subject to further discussions with the oxygen and nitrogen provider and detailed design work, therefore the construction of new oxygen and nitrogen ('Other Gases')

pipelines to that potential supplier is included within the Proposed Development.

- Cooling Water Circulation System including cooling water towers, pumps and circuit piping to supply cooling water where it is needed throughout the Hydrogen Production Facility. Detail regarding the options for sourcing of water is included under 'Water Connections', below.
- Auxiliary Boiler to raise steam using a hydrogen rich fuel fitted with selective catalytic reduction ('SCR') and in continuous operation.
- A Process Water-treatment Plant will be used to treat water from the Northumbrian Water raw water supply prior to the demineralisation stage and may include Dissolved Air Flotation (DAF), Ultrafiltration (UF) (for removal of fine solids), reverse osmosis (RO) for removal of ions or other suitable pre-treatment technologies.
- A Demineralisation Plant to be used to treat water supplied to the Hydrogen Production Facility and also for stripped process condensate, flare knockout liquid and steam condensate from blowdown.
- A Bio-treatment Plant, which will treat process condensate to reduce nitrogen concentration using nitrification and denitrification. The treated process condensate will then be reused as makeup water in a Process Water Treatment Plant.
- An Effluent Treatment Plant (ETP), which will consist of an oily water separator, neutralisation sump, storm water sump and any other suitable treatment to meet agreed discharge standards.
- Flare, any fluid released from Hydrogen Production Facility during an emergency will be collected in the flare header system and sent to the flare drum where any liquid associated with the gas is separated. The gas from the flare drum will be sent to the flare system where it will be safely disposed by combustion.
- A Fire Water System consisting of fire water store on site (supplied by grey or raw water), pumps and firefighting system.
- Emergency Diesel Generator, emergency diesel generator which would be operated in the event of emergency to support safe shutdown of the plant and will be intermittently energized for periodic testing purpose.
- Chemical Storage for additives and fuel such as aqueous ammonia (NH₃), amines and diesel, which are imported by tanker.
- Above ground pressurised hydrogen storage shared between each phase, including high pressure compression and let down facilities.

3.1.22 In addition to the above, the following components and facilities will be incorporated into the layout of the Main Site as required:

- Main Site entrance (main access with gated entry) as well as a secondary access point(s) and emergency access;
- electrical buildings;
- internal access roads;
- vehicle turning areas;
- internal and external storage areas;
- workshop and maintenance stores;
- a control room and administration buildings;
- lighting;
- car parking; and
- lorry holding and security inspection areas.

3.1.23 The Hydrogen Production Facility will be fenced securely with some internal operations having further internal fencing installed around them as required.

Carbon Dioxide Export Corridor

3.1.24 The captured carbon dioxide will be further conditioned and compressed after analysing and metering, and transported to the NEP carbon dioxide gathering network on the adjacent NZT site, via a carbon dioxide export connection pipeline. There will be an AGI at each end of the connection pipeline for metering, analysing and pigging. This export connection including the two AGIs is part of the Proposed Development and is being consented under this DCO. From the AGI's location within the Main Site the carbon dioxide pipeline will be routed east along the south perimeter of the site fence line to the NEP Site. The pipeline will be approximately 1 km long.

3.1.25 The land required for the Carbon Dioxide Export Corridor for the Main Site and indicative pig launching location is shown on Figure 4-3: Carbon Dioxide Export Corridor of the ES (Document reference 6.3). The carbon dioxide export connection will either be above or below ground or a combination of the two. The carbon dioxide pipeline will be entirely located on private land.

3.1.26 NEP will compress the carbon dioxide to high pressure ("dense phase") for transportation by pipeline to the Endurance underground store, located approximately 145 km to the east/south-east of the Proposed Development Site beneath the North Sea. The onshore infrastructure required for compression and export (the high-pressure compression plant and carbon dioxide export pipeline) is subject to a separate consent, through the DCO for the NZT DCO Project which was granted on 16th February 2023. The offshore elements (below Mean High Water Springs) will also be separately consented under the Energy Act 2008 and the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020. Geological storage and offshore carbon dioxide transportation will be managed and operated by NEP.

Natural Gas Connection Corridor

- 3.1.27 Natural gas feedstock for the hydrogen production process will be imported from the National Gas Grid to the Hydrogen Production Facility for use in the reforming process. The exact routeing of this connection within the Natural Gas Connection Corridor is subject to ongoing design. A natural gas pipeline will connect the Hydrogen Production Facility at the Main Site to an existing gas pipeline, with AGIs at each end.
- 3.1.28 The area required for the natural gas connection corridor is shown in Figure 4-5: Natural Gas Connection Corridor of the ES (Document reference 6.3). Much of the proposed above ground pipeline will be routed in existing designated pipeline corridors alongside existing third party pipeline infrastructure. It is anticipated that new pipelines will be installed in parallel and working to one side of the existing pipelines.
- 3.1.29 The natural gas connection will either be above or below ground or a combination of the two.

Hydrogen Distribution Network

- 3.1.30 A gaseous phase hydrogen pipeline network is required to connect the Hydrogen Production Facility at the Main Site to various potential industrial offtakers across the Tees Valley, as shown on Figure 4-4: Hydrogen Distribution Network of the ES (Document reference 6.3).
- 3.1.31 Once processed to the required specification and compressed at the Main Site, hydrogen would be exported using the proposed hydrogen pipeline network. The Hydrogen Distribution Network would require a crossing under the River Tees to export to offtakers located to the northern side of the river. The hydrogen pipelines would commence and finish at AGIs including metering and pigging skids and tie-in points with the relevant offtaker. The latter are likely to be within the offtakers' site boundaries. Any connection works beyond these AGIs and tie-in points will be progressed and consented separately by the relevant offtaker.
- 3.1.32 The Hydrogen Distribution Network is also being routed to provide connections to the existing Gas Transmission System and Gas Distribution Networks, to enable blending into the distribution network and transmission system and connection to the future hydrogen transmission system, Project Union and its first regional development East Coast Hydrogen. The East Coast Hydrogen project is looking to repurpose existing natural gas pipelines in the area to hydrogen service and the Applicant is looking to connect to this infrastructure to enable a connection to this system.
- 3.1.33 The East Coast Hydrogen Project is being developed by a combination of transmission and distribution network operators, which will necessitate connections to both types of network. Therefore, the Applicant has sought flexibility in how this connection is delivered to connect to those networks, as those operators work with Government to determine the best technical way to deliver a national hydrogen network and blending, and work with the Applicant to identify

the best approach that works for them in light of the constraints of each of their networks and existing AGI locations.

- 3.1.34 As such, the alternative connection locations being explored (and thus require allowance within the DCO for connecting pipeline corridors to them) include;
- Cowpen Bewley natural gas AGI. A connection to this location would achieve a connection to Project Union, Natural Gas Transmission System, and Natural Gas Distribution Network.
 - National Gas Grid AGI near Billingham Industrial Park. A connection to this location would achieve a connection to Project Union and Natural Gas Transmission System.
 - Northern Gas Networks AGI near Saltholme. A connection to this location would achieve a connection to Natural Gas Distribution Network.
- 3.1.35 Owing to the different requirements of transmission and distribution system connections, two combinations of these locations are being explored as options for the scheme. These include: Option A (comprising a connection at Location 1 and Location 2) and Option B (comprising a connection at Location 2 and Location 3). These are represented pictorially in Figure 4.2 (ES Volume II, EN070009/APP/6.3)
- 3.1.36 The final choice of approach will be determined by the development of the Government's policy in relation to Project Union and blending and how the Distribution and Transmission System Operators re-configure their systems to respond to this. The Applicant will keep engaging with the Distribution Network and Transmission System Operators to ensure connectivity to Project Union and the wider UK hydrogen infrastructure to enable the development of this.

Electrical Connection Corridor

- 3.1.37 Various options are being considered for electricity supply which include a connection to proposed 66 kilovolt (kV) substations at Teesworks (planning permission for which Teesworks has obtained) or a connection to NZT's electrical network within the Electrical Connection Corridor. There is also potential to connect at other substations, operated locally by Northern Power Grid, such as Lackenby and/or Grangetown 66 kV substations. The final decision on substation/connection choice will be subject to design development and further work based on constructability and electrical network resilience and capacity.
- 3.1.38 The land required for all options for the electrical connection corridor is shown on Figure 4-6: Electrical Connection Corridor of the ES (Document reference 6.3). It is expected that cables will be installed underground.

Water Connections

Water Supply

- 3.1.39 Water supply connections are required at the Hydrogen Production Facility, including for cooling water purposes. It is expected that water (for process and sanitary uses) will be supplied via either:

- the existing Northumbrian Water Ltd (NWL) raw water supply to the Teesworks site; or
 - a new connection to the existing NWL raw water supply either via tie in to NZT infrastructure or the installation of a new connection.
- 3.1.40 A Raw Water Treatment Plant will be used to pre-treat the source water prior to the demineralisation stage and the Demineralisation Plant will be used to treat water supplied to the Hydrogen Production Facility, stripped process condensate, flare knockout liquid and steam condensate and blowdown.
- 3.1.41 The pipeline from the Hydrogen Production Facility to the proposed tie-in location at the east end of Blue Road will be constructed below ground.
- 3.1.42 At this stage in the design and assessment process and in applying the Rochdale Envelope approach, the land required for both of the above water connection options has been depicted as a broad corridor, as shown by Figure 4-7: Water Connections Corridor of the ES (Document reference 6.3).

Wastewater Disposal

- 3.1.43 Water discharge connections are required at the Hydrogen Production Facility for discharge of treated effluent. There are a number of wastewater streams that would be created within the Main Site that need to be handled appropriately, so that they can be treated and reused, namely:
- process wastewater (which is a process condensate stream from the reforming process);
 - cooling tower blowdown (as part of the cooling water system);
 - demineralisation plant rejects (as part of the demineralised water plant);
 - other streams under non-ordinary operations, such as oily water (during maintenance), first flush stormwater/ firewater and clean second flush stormwater and firewater; and
 - domestic/sanitary effluent.
- 3.1.44 Process wastewater would be treated in a Bio-treatment Plant while other wastewater streams would be treated in an Effluent Treatment Plant (ETP). Both treatment plants would be located on the Main Site.
- 3.1.45 Two options are under consideration in terms of process effluent management. The first option is based on Minimalised Liquid Discharge (MLD) from the Effluent Treatment Plant. In this scenario, treated wastewater from the on-site Effluent Treatment Plant will be reused as makeup water in the Raw Water Pre-Treatment Plant. A concentrated liquid waste stream containing salts and residual nutrients would be taken offsite by tanker for disposal. The second option is an alternative to MLD and requires treatment of processed effluent in the bio-treatment plant and discharge via the NZT outfall to Tees Bay.
- 3.1.46 Clean stormwater could be discharged either to the NZT outfall discharging into Tees Bay or alternatively to a new outfall via the Teesworks drainage system.

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- 3.1.47 Discharge of domestic/sanitary effluent would be to the local sewage system for treatment with a tie-in to Bran Sands via Teesworks system. In terms of waste disposal from the water plant, sludge from the Raw Water Pre-Treatment Plant and Bio-treatment Plant may be processed at Bran Sands WwTW with Brine from the Effluent Treatment Plant being sent to a suitable site for discharge.
- 3.1.48 The wastewater disposal pipelines will be entirely below ground.
- 3.1.49 At this stage in the design process and in applying the Rochdale Envelope approach, the land required for the water connection options currently proposed for the Main Site has been depicted as a broad corridor, as shown by Figure 4-7: Water Connections Corridor of the ES (Document reference 6.3) to account for all options.

Other Gases Connections

- 3.1.50 Other Gas Connection Corridors may be required for the transportation of compressed oxygen and nitrogen for use at the Hydrogen Production Facility, should a third-party (off-site) ASU be selected to supply these gases.
- 3.1.51 The land required for the other gases connection corridor is shown in Figure 4-8: Other Gases Connection Corridor (Oxygen and Nitrogen) of the ES (Document reference 6.3). The pipeline connections for other gases will either be entirely above or below ground or a combination of the two.

Hydrogen Storage

- 3.1.52 On-Site above ground storage of hydrogen, located at the Main Site, will be utilised to provide resilience to the hydrogen production network. The hydrogen storage is common for Phases 1 and 2 of the Proposed Development. Permission will be sought from the Health and Safety Executive and the Hazardous Substances Authority (HSA) (i.e. Local Planning Authority (LPA)) for storage, under the Control of Major Accident Hazards (COMAH) (HM Government, 2015) and Hazardous Substance Consent regimes respectively. No off-site storage of hydrogen is required for the Proposed Development.

Material Storage

- 3.1.53 Chemicals required for the operation of the Hydrogen Production Facility would need to be stored and used at the Main Site. Some of these materials may be classed as hazardous. Chemical storage will comply with requirements under the site's Environmental Permit.
- 3.1.54 An inventory of materials to be stored on the Main Site would be finalised through the detailed design. However, where storage of hazardous materials, individually or in-combination exceeds the relevant thresholds, separate permissions will be sought from the HSE and HSA (LPA) for their storage, under the COMAH and Hazardous Substance Consent regimes respectively. All chemical storage will also be regulated by the EA through an Environmental Permit that will be required for the operation of the Proposed Development.

Design Parameters

- 3.1.55 The design of the Proposed Development will continue to be refined until the completion of the detailed design stage. However, the final design will be within the parameters assessed within the ES. The evolution of the Proposed Development's design to date is outlined in Chapter 6: Alternatives and Design Evolution of the ES (Document reference 6.2).
- 3.1.56 A number of the design aspects and features of the Proposed Development cannot be confirmed until the EPC contractor has been appointed. For example, the building sizes may vary depending on the contractor selected and their specific configuration and selection of plant. Focussed use of the Rochdale Envelope approach has been adopted to define appropriate parameters for use in the EIA, and these are secured in the Order (Document Ref. 4.1).
- 3.1.57 The horizontal limits of deviation for the Work Nos. set out in this section are shown on the Works Plans (Document reference 2.4).
- 3.1.58 It is anticipated that a permanent easement width of 12 m, 6 m either side of the pipeline centreline, will be used for the buried sections of the Hydrogen Distribution Network laid outside the Main Site.
- 3.1.59 Other pipelines will not utilise a standard permanent easement width but are yet to have their easement confirmed, and which may vary between and along them depending on the land, other apparatus, works and other requirements.
- 3.1.60 The Applicant may also require other rights outside the 'main' easement widths, to allow for access and other required activities.
- 3.1.61 The detailed design of the Proposed Development will be secured by a Requirement contained in Schedule 2 of the Order (Document reference 4.1).

Operational Access Agreements

- 3.1.62 The Main Site would be accessed from Steel House Gate roundabout on the A1085 Trunk Road, and then on internal access roads within the Teesworks site.
- 3.1.63 Access routes to the Hydrogen Distribution Network north of the River Tees are assumed to be via the A1046 Haverton Hill Rd/Port Clarence Road and the B1275. Access routes to the Connection Corridors located to the south of the River Tees are assumed to be via the A1085 Trunk Road and Steel House Gate roundabout.

Construction Programme

- 3.1.64 The Proposed Development construction programme is anticipated to commence shortly after the Development Consent Order (DCO) decision (projected to be by Q3 2025) and after the Final Investment Decision (FID).
- 3.1.65 It is proposed that the Proposed Development will be constructed in two phases as outlined in Chapter 4: Proposed Development of the ES (Document reference 6.2). Phase 1 will consist of a single hydrogen production unit, on-site hydrogen storage and supporting utilities. Phase 2 will consist of a further hydrogen production unit and supporting utilities constructed thereafter. The majority of the Hydrogen Distribution Networks to facilitate transportation of hydrogen to offtakers will be

constructed and completed in Phase 1 except for short additional spurs within the Hydrogen Distribution Networks, to be completed in Phase 2.

- 3.1.66 Permitted preliminary works for Phase 1 are expected to start in the third quarter (Q3) of 2025 (subject to the granting of the DCO), with the main civils works beginning in Q4 of 2025. Construction of Phase 1 is anticipated to last approximately 32 to 36 months and is expected to be complete in Q2 2028.
- 3.1.67 The early enabling works for Phase 2 may overlap with commissioning for Phase 1 in Q2 2028. It is expected that the main civils works for Phase 2 will begin in Q3 of 2028 (after Phase 1 is commissioned) and be completed by the end of 2030. It is proposed that there will be no overlap between the main construction phases of Phases 1 and 2.

4.0 THE PROPOSED DEVELOPMENT SITE AND THE ORDER LAND

Proposed Development Site

- 4.1.1 The Proposed Development Site boundary is shown on Figure 1-1: Proposed Development Site Location Plan in the ES (Document Reference 6.3). This is the area over which powers of compulsory acquisition and temporary possession are sought (subject to a few exceptions, as set out in Section 6 below).
- 4.1.2 The Proposed Development Site boundary has been refined through on-going studies and by taking into account the responses to the Applicant's consultation. A summary of it and the surrounding area is provided below – more information is available in Chapter 3 of the ES (Document Reference 6.2).
- 4.1.3 The Proposed Development Site covers an area of approximately 508 hectares (ha) and is located primarily within the administrative boundaries of Redcar and Cleveland Borough Council (RCBC) and Stockton-on-Tees Borough Council (STBC). The Hydrogen Distribution Network (refer to Figure 4-4 in ES Volume II, Document reference 6.3) extends further north-west to also include land within the administrative boundary of Hartlepool Borough Council (HBC).
- 4.1.4 The Hydrogen Production Facility will be located at the Main Site within the Teesworks development site. Existing structures currently located within the Main Site will be demolished to clear the site (by Teesworks), prior to and irrespective of the commencement of works associated with the Proposed Development. The Main Site comprises approximately 86 ha of former industrial land that was used for steel production, including a mix of industrial buildings. As of March 2024, much of the site infrastructure including industrial buildings and overhead pipes have either been demolished or is 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.
- 4.1.5 The topography of the Main Site is relatively flat, with typical ground levels being between 6 - 8 m Above Ordnance Datum (AOD).
- 4.1.6 In addition to the Hydrogen Production Facility, the Proposed Development includes the following, and which are shown on the ES Figures referenced:
- Hydrogen Distribution Network (refer to Figure 4-4 in ES Volume II, Document reference 6.3);
 - Oxygen (O₂) and nitrogen (N₂) supply pipelines (as an alternative to use of the proposed ASU) (Other Gases Connection Corridor) (refer to Figure 4-8 in ES Volume II, Document reference 6.3);
 - Carbon dioxide (CO₂) Export Corridor (refer to Figure 4-3 in ES Volume II, Document reference 6.3);
 - Natural Gas Connection Corridor (refer to Figure 4-5 in ES Volume II, Document Reference 6.3);

- Electrical Connection Corridor (refer to Figure 4-6 in ES Volume II, Document reference 6.3); and
- Water Connections Corridor (including wastewater treatment and disposal infrastructure) (refer to Figure 4-7 in ES Volume II, Document reference 6.3).

4.1.7 Further details regarding the Proposed Development are provided within Section 3 above and Chapter 4: Proposed Development (ES Volume I, Document reference 6.2).

Surrounding Area

4.1.8 The area surrounding the Main Site and the Proposed Development Site is characterised by industrial land uses. The nearest main settlements are the towns of Redcar, Eston, Middlesbrough, Billingham (within Stockton-on-Tees) and Seaton Carew (within Hartlepool).

4.1.9 There is a concentration of industrial land uses around the mouth of the River Tees both historically and in present usage through redevelopment. The operational Redcar Bulk Terminal (RBT) is located immediately adjacent to the west of the Main Site, on the south bank of the River Tees.

4.1.10 To the north-east of the Main Site lie the coastal areas of South Gare and Coatham Dunes (beyond areas of ongoing industrial redevelopment), which are local environment and community assets. To the south of the Main Site lies the Northumbrian Water Ltd Bran Sands effluent treatment works, operational land of Teesport, and the Wilton International Site chemical complex.

4.1.11 The Proposed Development Site extends westward across the River Tees towards the industrial complex at Seal Sands, and industrial and residential areas at Billingham and Port Clarence.

5.0 COMPULSORY ACQUISITION POWERS

- 5.1.1 The PA 2008 provides the statutory basis for a DCO including powers of compulsory acquisition.
- 5.1.2 Section 120 of the PA 2008 provides that an order granting development consent may make provision relating to, or to matters ancillary to, the development for which consent is granted. Schedule 5 to the PA 2008 lists the matters ancillary to the development, which includes the acquisition of land, compulsorily or by agreement, and the creation, suspension or extinguishment of, or interference with, interests in or rights over land, compulsorily or by agreement.
- 5.1.3 Section 122 of the PA 2008 provides that an order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State, in respect of the Application, is satisfied that the land is:
- required for the development to which the DCO relates;
 - required to facilitate or is incidental to that development; or
 - replacement land for commons, open spaces etc.
- 5.1.4 The Secretary of State must also be satisfied that there is a compelling case in the public interest for the inclusion of powers of compulsory acquisition in the Order.
- 5.1.5 The application of these statutory conditions and tests to the DCO Application and to the Proposed Development is considered in the following sections of this document.

6.0 NEED FOR COMPULSORY ACQUISITION OF LAND AND RIGHTS

The matters to which the Secretary of State must have regard

- 6.1.1 As noted above, under Section 122 of the PA 2008, a DCO which includes compulsory acquisition powers may be granted only if the conditions in Sections 122(2) and 122(3) are met. The conditions to be met are that:
- the land is required for the development to which the DCO relates or is required to facilitate or is incidental to the development (Section 122(2)); and
 - there is a compelling case in the public interest for inclusion of powers of compulsory acquisition in the DCO (Section 122(3)). The Secretary of State must be persuaded that the public benefits from the compulsory acquisition will outweigh the private loss suffered by those whose land is to be acquired (see Sections 7 and 8 below).
- 6.1.2 In respect of the Section 122(2) condition, the 'Guidance related to procedures for the compulsory acquisition of land' (at paragraph 11 of the CA Guidance) states that applicants should be able to demonstrate to the satisfaction of the Secretary of State that the land in question is needed for the development for which consent is sought. The CA Guidance goes on to say that the Secretary of State will need to be satisfied that the land to be acquired is no more than is reasonably required for the purposes of the development.
- 6.1.3 In respect of the Section 122(3) condition, the CA Guidance (at paragraph 13) states that the Secretary of State will need to be persuaded that there is compelling evidence that the public benefits that would be derived from the compulsory acquisition will outweigh the private loss that would be suffered by those whose land is to be acquired. At paragraph 14, the CA Guidance states that in determining where the balance of public interest lies, the Secretary of State will weigh up the public benefits that a scheme will bring against any private loss to those affected by compulsory acquisition.
- 6.1.4 Further, paragraphs 8 to 10 of the CA Guidance also set out a number of general considerations that the applicant must demonstrate to the satisfaction of the Secretary of State when justifying an order authorising compulsory acquisition. These are as follows:
- that all reasonable alternatives to compulsory acquisition (including modifications to Proposed Development) have been explored - see section 4.0 above in relation to how the Applicant selected parts of the Site;
 - that the proposed interference with the rights of those with an interest in the land is for a legitimate purpose and is necessary and proportionate - see the remainder of this section, and Section 11.0 below;
 - that the Applicant has a clear idea of how they intend to use the land which it is proposed to acquire - Sections 3.0 and 4.0 above describe the Proposed Development and the Site respectively, and this section describes the

nature of the interest sought and the purposes for which areas are to be acquired or used;

- that there is a reasonable prospect of the requisite funds for the acquisition becoming available - see the Funding Statement (Document Reference 3.3); and
- that the purposes for which compulsory acquisition of land powers are included in the DCO are legitimate and are sufficient to justify interfering with the human rights of those with an interest in the land affected - see Section 11.0.

6.1.5 This Statement sets out the factors that the Applicant considers demonstrate that the conditions in Section 122 of the PA 2008, and the considerations set out in the CA Guidance, are satisfied.

Need for Compulsory Acquisition of Land and Rights (Sections 122(2) and (3))

6.1.6 To ensure that the Proposed Development can be built, maintained and operated, and so that the Government's policies are met in relation to the timely provision of new low carbon hydrogen production capacity and its distribution, and meeting net zero carbon emissions targets for 2050, the Applicant requires the acquisition of a number of property interests in third-party ownership, and has therefore applied for the grant of powers to facilitate acquisition and/or creation of new rights and interests, and to extinguish/suspend rights over land.

6.1.7 There are four categories of land powers included in the Order (Document Ref. 4.1) – three of these are powers of compulsory acquisition of interests and the fourth is a power to occupy land temporarily. Each is introduced briefly below, followed by further information on the necessity of the powers sought and the purpose for which the Applicant requires the land. The section also provides information on the status of negotiations to acquire these interests by agreement.

All Interests (Including Freehold)

6.1.8 The land over which compulsory powers are sought generally (and therefore including the freehold interest) is shown edged red and shaded pink on the Land Plans (Document Reference 2.2). In summary, the areas in which freehold acquisition is sought are:

- part of the Teesworks Site (part of the former Redcar Steel Works Site) which is the location for the proposed Hydrogen Production Facility (Work No. 1), as well as part of various connections to Work No. 1;
- land required for the above ground installations (AGIs) which are part of Work No. 2 (Natural Gas Connection), connecting the existing Sembcorp gas supply pipeline to the National Transmission System for gas, and connecting the existing Sembcorp gas pipeline to the Natural Gas Connection (Work No. 2);

- land required for the above ground installations (AGIs) which are part of Work No. 3 (Electrical Connection Works), for the import of electricity from electricity transmission networks;
- land required for the above ground installations (AGIs) which are part of Work No. 6 (Hydrogen Distribution Network), to connect Work No. 6A to the gas grid and distribution networks, and to hydrogen offtakers (Work No. 6B);
- land required for the above ground installations (AGIs) which are part of Work No. 7 (Carbon Dioxide Export Pipeline), for the export of Carbon Dioxide;
- Replacement Land required in exchange for Lost Open Space (see section 9 below for further detail) (Work No. 11).

6.1.9 The Applicant has only included powers to compulsorily acquire the freehold interest in land where other powers (such as to acquire new rights or take temporary possession) would not be sufficient or appropriate to enable the construction, operation or maintenance of the Proposed Development. Article 22 of the Order is relied upon in respect of this land.

New Rights

6.1.10 The land over which compulsory acquisition powers are sought to be able to create new rights is shown edged red and shaded blue on the Land Plans (Document Reference 2.2). In summary, these are the areas required for installation, construction, operation and maintenance of:

- the Natural Gas Connection (Work No. 2A);
- the Electrical Connection Corridor (Work No. 3);
- the Water Connections (Work Nos. 4 and 5);
- the Hydrogen Distribution Network – underground and overground pipelines (Work No. 6A);
- the CO2 Export Connection (Work No. 7A);
- the Other Gases Connections (Work No. 8); and
- the Access and Highway Works (Work No. 10, to the extent these are permanent).

6.1.11 Most of these areas over which new rights are sought include both the substantive works (such as a pipeline or cable) and, where necessary, routes along which the Applicant can gain access to the relevant connection corridors.

6.1.12 Article 25 of the Order is relied upon in respect of new rights. The purposes for which new rights can be sought are set out in Schedule 8 to the Order, split into categories relating to the parts of the Proposed Development (e.g. the different connection corridors).

6.1.13 The interaction between the taking of temporary possession and acquiring new rights is set out further below.

- 6.1.14 Article 25 of the Order is also relied upon in respect of new rights over plots shown edged red and shaded pink on the Land Plans. Article 25(1) of the Order is drafted to allow powers to acquire the freehold (under Article 22) and, in the alternative, powers to acquire new rights (and impose restrictive covenants) over plots shown shaded pink, so that if the freehold interest in parts of these plots does not need to be acquired, but the land is still required for other connections, rights can be sought over those parts of the plots, rather than acquiring the freehold. Schedule 8 to the Order distinguishes between the plots shaded blue and those shaded pink. This approach to Article 25 may allow the Applicant to acquire less land outright (pursuant to Article 22, if detailed design demonstrates that is feasible) and instead to acquire rights and impose restrictions over that and, which is a lesser interference.
- 6.1.15 In addition, the Order includes the power to impose restrictive covenants for the purposes for which new rights are sought, being to ensure protection of infrastructure installed as part of the Proposed Development (including underground elements) and to protect and maintain accesses. The restrictions which can be acquired are limited to those for the purposes set out in Schedule 10, in each case linked to specific work numbers.
- 6.1.16 The Order also includes the power to acquire rights and impose restrictions for the benefit of statutory undertakers pursuant to Article 25, so that where statutory undertakers' apparatus has to be moved or where new statutory undertakers' apparatus is required, the Applicant has the power to acquire the necessary rights.

Extinguishment / suspension of rights

- 6.1.17 In addition, the Applicant has included powers in the Order to ensure that easements, restrictions and other private rights identified as affecting the land can be extinguished or suspended, so as to facilitate the construction and operation of the Proposed Development without hindrance. In addition, there may be unknown rights, restrictions, easements or servitudes affecting that land which also need to be extinguished in order to facilitate the construction and operation of the Proposed Development. Articles 23 and 26 of the Order provide this power, which applies in relation to land in which compulsory acquisition or temporary possession are proposed.

Temporary use of land

- 6.1.18 The land in respect of which powers of temporary occupation are sought is shown edged red and shaded yellow on the Land Plans. Articles 32 and 33 of the Order are relied upon in respect of this land.
- 6.1.19 Article 32 permits temporary use in two ways:
- Firstly, the land identified in Schedule 10 to the Order may only be temporarily possessed (i.e. the Applicant cannot acquire the land nor new rights over it), and possession can only be taken for the purposes set out in that Schedule for the particular plot.

- In summary, these are the areas required for construction of adjacent permanent works (such as temporary working areas alongside connection corridors, e.g. Work Nos. 6 and 8), temporary use as construction and laydown areas (Work No. 9) and some of the areas required for access and highway improvements (Work No. 10); and
- Secondly, Article 32 permits the Applicant to take temporary possession of any other part of the Order Land where it has not yet exercised powers of compulsory acquisition - this will allow it (for instance) to initially take temporary possession of the whole width of corridors required for pipeline or cable connections. This could be relevant to:
 - the Natural Gas Connection (Work No. 2A);
 - the Electrical Connection Corridor (Work No. 3);
 - the Water Connections (Work Nos. 4 and 5);
 - the Hydrogen Distribution Network – underground and overground pipelines (Work No. 6A);
 - the CO2 Export Connection (Work No. 7A); and
 - the Other Gases Connections (Work No. 8).
- For each of these works the Order includes power to acquire new rights in order to construct, maintain and operate the relevant apparatus. Once the Applicant has carried out detailed surveys and installed the relevant apparatus (such as pipes or cable), the Applicant can then acquire new rights (pursuant to the powers set out above) within only a narrower strip in which permanent rights are required, within the wider construction corridor. This phased approach to occupation and acquisition allows the permanent rights corridor to be defined during or after construction, and to be only that which is necessary for the operation, maintenance and protection of the apparatus. Such an approach has precedent amongst other DCOs including the Eggborough Gas Fired Generating Station Order 2018 and the Drax Power (Generating Stations) Order 2019.

6.1.20 The Applicant has included specific powers to use land temporarily (i.e. that coloured yellow on the Land Plans) to construct the Proposed Development where it does not require any interest in the land on a permanent basis. These areas relate to:

- the temporary construction laydown areas (Work No. 9, to the extent these do not overlap with permanent works); and
- some access and highway improvements (Work No. 10) and which will only be used for the purposes of construction.

6.1.21 The construction working width required will generally be around 35 metres for the below ground connections, except where this needs to be wider in order to accommodate crossings (of watercourses, railways, drains, roads or similar), for construction compounds, and for access points. In other areas the corridor has

been sized to 'match' the extent of an existing apparatus corridor in which the Applicant's apparatus will be built.

- 6.1.22 The construction area allowed for a particular crossing depends on the likely construction method to be employed - for instance, a larger area is allowed around the start and end points for crossings to be achieved using trenchless techniques, and along the length of connections to be installed using trenchless techniques, to allow the necessary flexibility in routeing the relevant apparatus underground. Further information on the method of construction can be found in Chapter 5 of the Environmental Statement (Volume I, Document Reference 6.2).

Land in Which No Powers Are Sought ('White Land')

- 6.1.23 There are also areas of the Order Land over which no powers are sought, and which are shown as 'White Land' (i.e. not coloured) on the Land Plans. These are within Wilton International and close to Cowpen Bewley village, respectively shown on Sheets 19 and 4 of the Land Plans (Document Reference 2.2). In respect of these areas the Applicant is not seeking any powers, in order to demonstrate to the land owner (at Wilton) and local community (at Cowpen Bewley) land in which works will not be undertaken.

Conclusion on Compulsory Acquisition Powers Sought

- 6.1.24 The Applicant has been seeking to acquire the relevant freehold interests, new rights and temporary use of land by private treaty, in order to ensure implementation of the Proposed Development. However, it has not yet been possible to acquire all of these by agreement. In addition, the Applicant requires certain matters to be suspended, overridden or extinguished within the Order Land so as to ensure there are no impediments to the construction, operation and maintenance of the Proposed Development.
- 6.1.25 In the absence of powers of compulsory acquisition, the Order Land may not be assembled, uncertainty will continue to prevail and the Applicant considers that their objectives and Government policy objectives would not be achieved.
- 6.1.26 Whilst seeking compulsory purchase powers, the Applicant will continue to seek to acquire the land, the temporary use of land, the rights and other interests by agreement, as well as secure the removal of matters affecting the Order Land that may impede the Proposed Development, wherever possible. This approach of making the application for powers of compulsory acquisition in the Application and, in parallel, conducting negotiations to acquire land by agreement, accords with paragraph 26 of the CA Guidance.
- 6.1.27 The Applicant's justification for seeking compulsory purchase powers, in accordance with the provisions of the PA 2008, is to secure land, the temporary use of land, the rights and other interests required to enable them to construct, operate and maintain the Proposed Development within a reasonable commercial timeframe.
- 6.1.28 The inclusion of powers of compulsory acquisition in the Order is sought in order to ensure that this can be achieved. The relevant powers, and the land and interests

sought together with the land required for temporary use, are no more than is required to facilitate the Proposed Development, its construction and future maintenance.

Use of the Order Land and Status of Negotiations

- 6.1.29 The purpose for which land is subject to the proposed powers of compulsory acquisition and to possess land temporarily (as per Articles 22, 25, 32 and 33 of the Order) is summarised above, and is also listed (by owner / plot) in the Schedule of Negotiations and Powers Sought (Document Reference 3.4).
- 6.1.30 The Schedule of Negotiations and Powers Sought describes the compulsory acquisition powers or temporary possession powers sought, by plot number as referenced in the Book of Reference and Land Plans (Document Refs. 3.1 and 2.2 respectively), with plots grouped together for each interested party. The Schedule of Negotiations and Powers Sought (Document Reference 3.4) should be read together with those documents. Some plot numbers appear in more than one row in the Schedule of Negotiations and Powers Sought, indicating that there is more than one interest in the relevant plot (such as a freehold owner and a tenant).
- 6.1.31 The Schedule of Negotiations and Powers Sought also sets out the position in terms of the Applicant's negotiations to acquire interests in land or to take possession of land required for the Proposed Development by agreement.

Alternatives to Compulsory Acquisition

- 6.1.32 The Proposed Development requires the acquisition of land and the acquisition of / creation of rights to secure the land and rights needed to build and operate it. Accordingly, there is no alternative but to seek to acquire land, the temporary use of land and the acquisition of / creation of rights to allow the Proposed Development to be constructed, operated and maintained.
- 6.1.33 It is considered that the 'Do Nothing' scenario is not appropriate given the established national need for low carbon hydrogen production and distribution and the urgent need to transition to a low carbon economy and meet Net Zero 2050 commitments (see further below). The other key disadvantage of the 'Do Nothing' scenario would be the lack of additional investment in the local economy.

Main Site

- 6.1.34 The Main Site, the Teesworks site (being the location of Hydrogen Production Facility (Work No. 1) has been selected by the Applicant, as opposed to other potentially available sites for the following reasons, and in relation to which the Applicant took account of relevant policy in National Policy Statement EN-1, EN-4 and EN-5 (see further in section 8 below):
- reducing process safety risks due to being sufficiently remote from safety sensitive receptors;
 - proximity to the east coast and NEP infrastructure, to enable high pressure CO2 export to be quickly directed offshore to the Endurance storage facility;

- size – ensuring there is sufficient space for the Proposed Development, that it is safe to construct and it has expansion potential;
- utilising brownfield land where possible;
- remoteness from residential areas;
- proximity to industrial offtakers that could connect into the H2 network;
- proximity to necessary connections including a gas network, electricity transmission network, potential use of existing oxygen and nitrogen supply, water supply and wastewater management options;
- minimising environmental/social effects or risks; and
- discussions with landowners.

6.1.35 At this stage, design and assessment work is still ongoing to determine the most appropriate layout for the Main Site and flexibility for this has therefore been provided for in the limits of deviation shown on the Works Plans. Some of the factors that are being considered during this process are as follows:

- consideration of space available for the plant and construction laydown;
- ground conditions;
- proximity to the NEP infrastructure on the adjacent Net Zero Teesside (NZT) site, thereby minimising the length of the high-pressure CO₂ export connection;
- distance from residential areas/population/sensitive ecological receptors;
- linkages to the access to water supply;
- linkages to the access to the proposed NZT effluent outfall to Tees Bay or proposed new Teesworks outfall for surface water drainage and process effluent discharge;
- construction access including jetties that could be used for the delivery of Abnormal Indivisible Loads (AILs);
- relevant development plans (outlined in Chapter 7: Legislation and Planning Policy of the ES (Document reference 6.2) and
- the co-location of the Site with other BP projects such as HyGreen, providing opportunities for shared infrastructure.

Connection Corridors

6.1.36 At the time the Preliminary Environmental Information Report ('PEIR') was prepared a number of options remained under consideration for the routing of some of the connections required for the Proposed Development. These connections have been progressively refined (see ES Figure 4-2, ES Volume II, Document Ref. 6.3) and a summary of the alternatives considered which has resulted in those now submitted with the Order is presented in Chapter 6 of the ES (Volume I, Document Ref. 6.2).

6.1.37 Where possible, the Proposed Development has sought to utilise existing pipeline corridors and connections, so as to reduce the need for construction works or for new apparatus corridors to be created. These options have been evaluated in terms of their environmental effects as well as taking into account constructability and landownership issues.

6.1.38 Due to volume and continuous nature of supply of hydrogen to the offtakers, pipeline delivery has been chosen as the most efficient way of delivery when compared to alternatives such as use of road or sea based tanker transport.

Hydrogen Distribution Network Optionality

6.1.39 As well as serving industrial areas of Teesside, the Hydrogen Distribution Network is also being routed to provide connections to the existing Gas Transmission System and Gas Distribution Networks, to enable blending into the distribution network and transmission system and connection to the future hydrogen transmission system, Project Union and its first regional development East Coast Hydrogen. The East Coast Hydrogen project is looking to repurpose existing natural gas pipelines in the area to hydrogen service and the Applicant is looking to connect to this infrastructure to enable a connection to this system. The Applicant's approach to optionality for these parts of the Hydrogen Distribution Network is set out at paragraph 3.1.32 above.

Connection Corridor Routing

6.1.40 At this stage, some options remain under consideration for the routing of the Connection Corridors required for the Proposed Development, as shown on Figure 4-2 (ES Volume II, Document reference 6.3).

6.1.41 Options will be refined as the design and landowner negotiations progress, including (but not limited to):

- the options and refinement of routes carried forward for connection to the electricity supply network within the proposed connection corridors;
- the options and refinement of routes for the H₂ pipeline within the proposed Hydrogen Distribution Network; and
- the options and refinement of routes for the water connection within the proposed Water Connections Corridor.

6.1.42 The optionality in the Hydrogen Distribution Network is set out at paragraph 3.1.32 above.

6.1.43 The options being considered in respect to the water management are outlined in Chapter 4: Proposed Development (ES Volume I, Document reference 6.2). In summary:

- Raw water (for process and sanitary uses) will be supplied from the existing Northumbrian Water Limited (NWL) raw water supply, which is from an existing licensed abstraction point from the River Tees;
- Two options are under consideration in terms of process effluent management. The first option is based on Minimalised Liquid Discharge (MLD) from the

proposed Effluent Treatment Plant. In this scenario, treated process wastewater from the proposed Effluent Treatment Plant will be reused as makeup water in the Proposed Development's Water Treatment Plant. A low volume liquid waste stream containing salts and nutrients would be taken offsite for further treatment. The second option requires discharge of process effluent, pre-treated using reverse osmosis, to the NZT project outfall at Tees Bay; and

- Clean surface water runoff would also be discharged to the Tees Estuary or Tees Bay. The following options are being considered:
 - discharge via the NZT outfall; and
 - discharge via the proposed Teesworks outfall.

6.1.44 The routes of the Connection Corridors are shown on Figures 4.2 to 4.8 (ES Volume II, Document reference 6.3). The final routings take into consideration the location of sensitive environmental receptors including but not limited to statutory designated sites (Teesmouth and Cleveland Coast Ramsar, Special Protection Area (SPA) and Site of Special Scientific Interest) within the area. Where necessary, the selected routes seek to avoid environmentally sensitive areas and utilise existing established pipeline routes, and/or the least intrusive construction methodologies (e.g., trenchless methods, as opposed to use of open-cut trench techniques).

6.1.45 The Rochdale Envelope approach has been applied to address this optionality, as set out in each technical chapter of the ES (ES Volume I, Document reference 6.2).

Conclusion on Alternatives

6.1.46 The Applicant has undertaken a clear process to identify an appropriate site (with respect to the Main Site), and an appropriate form and route for the relevant linear elements of the Proposed Development), and has considered alternatives in doing so. None of the alternatives would provide the compelling benefits that the Proposed Development will, or would involve additional impacts or disadvantages in terms of land take, environmental, technical or other considerations.

6.1.47 The Applicant has retained some flexibility within the Connection Corridor routings which will be refined as the detailed design progresses.

6.1.48 The Applicant is seeking to acquire the necessary land and rights by agreement. Whilst it will continue to seek to acquire the land and rights by voluntary agreement, it requires the powers of compulsory acquisition sought in order to provide certainty that it will have all the land required to construct and operate the Proposed Development, in order to realise its very significant public benefits.

Availability of Funds for Compensation

6.1.49 The Funding Statement (Document Reference 3.3) confirms that the Applicant has the ability to procure the financial resources required for the Proposed Development, including the cost of acquiring any land and rights and the payment of compensation, as applicable. The Applicant has included an article in the Order

(Article 47, Document Ref. 4.1) which requires it to put in place financial security before exercising powers of compulsory acquisition.

- 6.1.50 The Applicant is not aware of any interests within the Order land in respect of which a person may be able to make a blight claim, but in the event this did occur the Applicant has access to sufficient funds to meet any compensation due.
- 6.1.51 The Applicant therefore considers that the Secretary of State can be satisfied that the requisite funds for payment of compensation will be available at the appropriate time.

7.0 JUSTIFICATION FOR THE USE OF POWERS OF COMPULSORY ACQUISITION

The Compelling Case

7.1.1 A Planning Statement (Document Ref. 5.2) and a Project Need Statement (Document Ref. 5.3) accompany the Application. These explain how the Proposed Development:

- meets an urgent need for new low carbon hydrogen production;
- is an essential part of decarbonising the power and industrial sectors, by providing the development of a low carbon hydrogen distribution network that enables decarbonisation of industrial emitters, helping the UK meet net zero targets;
- is a form of economic development that is suitable in its local context;
- minimises or mitigates adverse impacts to an acceptable degree;
- is compliant with National Policy Statements ('NPS') EN-1, EN-4 and EN-5 and in accordance with other decision-making factors specified in Section 104 of the PA 2008.

7.1.2 The Planning Statement and Project Need Statement provide an extensive review of these matters which are summarised in the following section.

The Need for the Proposed Development

7.1.3 The Proposed Development will support the decarbonisation of UK-produced natural gas by converting it to low carbon hydrogen in Teesside for use in industrial applications, thus helping to achieve national targets in relation to net zero. It will also contribute to restoring manufacturing jobs in the Tees Valley. The Proposed Development will export carbon dioxide (CO₂) to the Northern Endurance Partnership (NEP) offshore storage facility via NEP infrastructure on the adjacent Net Zero Teesside (NZE) site, including the high-pressure compression facility and the off-shore CO₂ export pipeline. Development consent was granted for the NZE project on 16 February 2024.

7.1.4 The need that exists for new low carbon hydrogen production and distribution is confirmed in the Energy NPSs, designated by the Secretary of State for BEIS (then the Department of Energy and Climate Change) in January 2024. These NPSs form the primary basis for decisions by the Secretary of State on nationally significant energy infrastructure that falls to be considered under the PA 2008.

7.1.5 The NPSs of most direct relevance to the Proposed Development include EN-1, EN-4 and EN-5. Of these, EN-1 sets out the 'need' that exists for new energy infrastructure.

The Overarching NPS for Energy (EN-1)

- 7.1.6 Paragraph 1.3.5 of revised EN-1 (January 2024) states that where the need for a particular type of energy infrastructure set out at paragraph 1.3.2 is established by the NPS, but that type of infrastructure is outside the scope of one of the technology specific NPSs, EN-1 alone will have effect and be the primary basis for SoS decision making. It goes on to state:

“This will be the case for, but is not limited to, unconventional hydrocarbon extraction sites, hydrogen pipeline and storage infrastructure, Carbon Capture Storage (CCS) pipeline infrastructure and other infrastructure not included in EN-2 or EN-3.”

- 7.1.7 On 22 December 2022, the SoS issued a Direction under Sections 35(1) and 35ZA of the PA 2008, that the Proposed Development is to be treated as development for which consent is required, including the Hydrogen Production Facility and any aspect of the Hydrogen Pipelines Corridor that is not automatically a NSIP. With regard to Section 35 directions, paragraph 1.3.10 of EN-1 states that:

“EN-1, in conjunction with any relevant technology specific NPS, will be the primary policy for Secretary of State decision making on projects in the field of energy for which a direction has been given under section 35.”

- 7.1.8 Section 2.2 ‘Net zero by 2050’ of revised EN-1 confirms the Government’s legally binding target (legislated for through the Climate Change Act 2008 (2050 Target Amendment) Order 2019) of achieving net zero in terms of GHG emissions by 2050.

- 7.1.9 Section 2.3 ‘Meeting net zero’ underlines how the provision of new energy infrastructure will be critical to the UK achieving net zero by 2050. Paragraph 2.3.3 confirms the Government’s objectives for the energy system, which are to ensure our supply of energy always remains secure, reliable, affordable and consistent with meeting the UK’s target to cut GHG emissions to net zero by 2050. It states that this will require a step change in the decarbonisation of our energy system. Paragraph 2.3.4 goes on to state that meeting these objectives necessitates a significant amount of energy infrastructure, both large and small-scale. This includes the infrastructure needed to convert primary sources of energy (e.g. wind) into energy carriers (e.g. electricity or hydrogen), and to store and transport these energy carriers into and around the country. It also includes the infrastructure needed to capture, transport and store carbon dioxide (CO₂). It stresses that the requirement for new energy infrastructure will present opportunities for the UK and contributes towards our ambition to support jobs in the UK’s clean energy industry and local supply chains.

- 7.1.10 Paragraph 2.3.6 of EN-1 underlines the need to transform the energy system by:

“... tackling emissions while continuing to ensure secure and reliable supply, and affordable bills for households and businesses. This includes increasing our supply of clean energy from renewables, nuclear and hydrogen manufactured using low carbon processes (low carbon hydrogen), and, where we still emit carbon, developing the industry and infrastructure to capture, transport and store it.”

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- 7.1.11 Section 2.6 ‘Sustainable development’ confirms (paragraph 2.6.1) that the Government’s wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe. Paragraph 2.6.2 is clear that sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed affects the well-being of the environment, society and the economy, for both current and future generations. For example, the availability of appropriate infrastructure supports the efficient working of the market so as to ensure competitive prices for consumers. The regulatory framework also encourages the energy industry to protect the more vulnerable.
- 7.1.12 Part 3 of EN-1 deals with ‘The need for new nationally significant energy infrastructure projects’. It explains why the Government sees a need for significant amounts of new large-scale energy infrastructure to meet its energy objectives and why it considers the need for such infrastructure is urgent. However, it notes at paragraph 3.1.2 that it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts. It goes on to state that these impacts will be minimised by the application of policy set out in Parts 4 ‘Assessment Principles’ and 5 ‘Generic Impacts’ of the NPS.
- 7.1.13 Paragraph 3.2.2 of EN-1 confirms that the UK needs a range of different types of energy infrastructure and at paragraph 3.2.3 states that it is for industry to propose new infrastructure within the strategic framework set by the Government. It also states that it is not appropriate for planning policy to set limits on different technologies. Furthermore, paragraphs 3.2.6 to 3.2.8 state that the SoS should assess all applications for development consent for the types of infrastructure covered by EN-1 on the basis that the Government has demonstrated that there is a need for those types of infrastructure which is urgent; that substantial weight should be given to that need; and that the SoS is not required to consider separately the specific contribution of any individual project to satisfying that need.
- 7.1.14 Paragraphs 3.2.11 and 3.2.12 together confirm that where an energy infrastructure project is not covered by Sections 15 to 21 of the PA 2008, but is considered to be nationally significant and is subject to a Direction under Section 35, then the application for development consent would need to be considered in accordance with EN-1:
- “In particular: ...*
- where the application is for hydrogen infrastructure not covered by sections 15-21 of the Planning Act, the Secretary of State should give substantial weight to the need established at paragraphs 3.4.12 to 3.4.22 of this NPS ...”*
- 7.1.15 Hydrogen is considered at Section 3.4 ‘The need for new nationally significant gas infrastructure’. As referred to above, the need for low carbon hydrogen infrastructure is set out at paragraphs 3.4.12 to 3.4.22 of revised EN-1. Paragraph 3.4.12 states that:
- “There is an urgent need for all types of low carbon hydrogen infrastructure to allow hydrogen to play its role in the transition to net zero.”*
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7.1.16 Paragraph 3.4.13 of EN-1 goes on to state:

“... the government is committed to developing low carbon hydrogen, which will be critical for meeting the UK’s legally binding commitment to achieve net zero by 2050, with the potential to help decarbonise vital UK industry sectors and provide flexible deployment across heat, power and transport.”

7.1.17 Paragraph 3.4.21 of EN-1 goes on to state that in considering applications for low carbon hydrogen infrastructure, the SoS will expect applicants to consider foreseeable future demand when considering the size and route of their investments. Applicants may propose pipelines with a greater capacity than demand might suggest at the time of consenting. Paragraph 3.4.22 also confirms that “to support the urgent need for low carbon hydrogen infrastructure, hydrogen distribution, pipelines and storage, are considered to be [Critical National Priority] CNP infrastructure”.

7.1.18 Section 3.5 of EN-1 deals with ‘The need for new nationally significant carbon capture and storage infrastructure’. Paragraph 3.5.1 notes that:

“There is an urgent need for new carbon capture and storage (CCS) infrastructure to support the transition to a net zero economy.”

7.1.19 While paragraph 3.5.2 highlights the Committee on Climate Change’s statement that CCS is a necessity and not an option and that:

“CCS infrastructure will also be needed to capture and store carbon dioxide from hydrogen production from natural gas ...”

Paragraph 3.5.8 also confirms that “to support the urgent need for new CCS infrastructure, CCS technologies, pipelines and storage infrastructure are considered to be CNP infrastructure.”

7.1.20 Parts 4 and 5 of revised EN-1 set out the ‘assessment principles’ and ‘generic impacts’ to be taken into account in respect of applications relating to energy infrastructure and covered by the NPS. .

7.1.21 Part 4 ‘Assessment Principles’ of EN-1 under ‘General Policies Considerations’ at paragraph 4.1.3 states that the SoS will start with a presumption in favour of granting development consent for applications covered by the energy NPS given the level and urgency of need for such infrastructure. The assessment principles to be taken into account, as which are set out in Part 4, include matters such as environmental effects; health; marine considerations; environmental and biodiversity net gain; criteria for good design; climate change adaptation and resilience; pollution control; and safety and security considerations, amongst others.

7.1.22 One of the matters dealt with in Section 4.2 of Part 4 of EN-1, is ‘The critical national priority for low carbon infrastructure’. Paragraph 4.2.4 confirms that the Government has concluded that there is a ‘critical national priority’ (CNP) for the provision of nationally significant low carbon infrastructure. As stated above, paragraphs 3.4.22 and 3.5.8 of EN-1 confirm that hydrogen and CCS infrastructure

are considered CNP infrastructure and this is further confirmed by paragraph 4.2.5, which states that:

“Low carbon infrastructure for the purposes of this policy means:

- for other energy infrastructure, fuels, pipelines and storage infrastructure, which fits within the normal definition of “low carbon”, such as hydrogen distribution, and carbon dioxide distribution*
- for energy infrastructure which is directed into the NSIP regime under section 35 of the Planning Act 2008, and fit within the normal definition of “low carbon”, such as interconnectors, Multi-Purpose Interconnectors, or ‘bootstraps’ to support the onshore network which are routed offshore.”*

- 7.1.23 The Proposed Development is clearly for the provision of nationally significant low carbon infrastructure and is subject to a Section 35 Direction and as such, falls under the scope of the CNP policy.
- 7.1.24 Paragraph 4.2.7 of EN-1 confirms that the CNP policy applies following the normal consideration of the need case, the impacts of the project and the application of the mitigation hierarchy and does not create an additional or cumulative need case or weighting. It is therefore to be weighed against residual impacts that have been identified. Paragraph 4.2.15 states that where non-Habitats Regulations Assessment (HRA) or non-Marine Conservation Zone (MCZ) residual impacts remain after mitigation, those residual impacts are unlikely to outweigh the urgent need for this type of infrastructure. This presumption, however, does not apply to residual impacts which present an unacceptable risk to, or interference with, human health and public safety, defence, irreplaceable habitats or unacceptable risk to the achievement of net zero.
- 7.1.25 Paragraphs 4.2.18 and 4.2.19 confirm that any HRA or MCZ residual impacts will be considered under the framework set out in The Conservation of Habitats and Species Regulations 2017 (HM Government, 2017) and the Marine and Coastal Access Act 2009 (MCAA) (HM Government, 2009) respectively, and where such residual impacts remain, the SoS will consider making a derogation under the relevant legislation.
- 7.1.26 Generic impacts (Part 5 of revised EN-1) are those impacts that arise from the development of all of the types of energy infrastructure covered by the energy NPSs. Generic impacts include matters such as air quality and emissions; flood risk; historic environment; landscape and visual; noise and vibration; socio-economic impacts; and traffic and transport, amongst others.

The NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 7.1.27 The NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) is considered to be relevant as the Proposed Development includes pipeline infrastructure, notably a natural gas supply pipeline and hydrogen distribution pipelines. While the natural gas supply pipeline is not an NSIP in its own right, it is associated development for the purposes of Section 115 of the PA 2008 and

paragraph 1.6.3 recognises that pipelines can be associated development by virtue of their connection with an NSIP.

7.1.28 EN-4 confirms (paragraph 1.6.6) that it has effect only in relation to natural gas infrastructure and does not have effect for hydrogen infrastructure, but that it “... may be part of other matters which the Secretary of State thinks are important and relevant to their decision on applications for hydrogen infrastructure, in which case they would need to take it into account.”

7.1.29 Section 2 of EN-4 deals with the assessment of and technology-specific information to be taken into account in the consideration of applications for the types of infrastructure covered by the NPS.

The NPS for Electricity Networks Infrastructure (EN-5)

7.1.30 The NPS for Electricity Networks Infrastructure (EN-5) is also considered to be relevant as the Proposed Development includes electricity grid connection infrastructure. While the electricity grid connection is not a NSIP in its own right, it is associated development for the purposes of Section 115 of the PA 2008 and paragraph 1.6.4 of EN-5 states that it will apply to such infrastructure if it constitutes associated development for which consent is sought along with an NSIP or if it is subject to a Section 35 direction such that it should be treated as an NSIP.

7.1.31 As with EN-4, Section 2 of EN-5 deals with the assessment of and technology-specific information to be taken into account in the consideration of applications for or including electricity grid connection infrastructure.

Achieving net zero emissions

7.1.32 The UK was the first major economy to create a legally binding target to bring greenhouse gas emissions to net zero through the Climate Change Act 2008 (2050 Target Amendment) Order 2019. This target was set considering the latest scientific evidence and was recommended by the Climate Change Committee (CCC), the UK’s independent climate advisory body.

7.1.33 The UK Government has a range of policies aimed at reducing greenhouse gas emissions which cause climate change.

7.1.34 The Government published its ‘*Net Zero Strategy (Build Back Greener)*’ on 19 October 2021 (updated April 2022). It set out policies and proposals for decarbonising all sectors of the UK economy to meet the Government’s net zero target by 2050. The Net Zero Strategy builds on the Government’s ‘*Ten-point plan for a green industrial revolution*’ which was published on 18 November 2020.

7.1.35 These policies were updated in March 2023 with a suite of publications under the policy paper, ‘*Powering Up Britain*’ that included the ‘*Powering Up Britain: Net Zero Growth Plan*’. Page 36 reaffirms the Government’s view that:

“Low carbon hydrogen is a critical component of our strategy to deliver energy security, drive economic growth and support net zero. The CCC and Independent Review of Net Zero emphasise the key role that low carbon hydrogen can play in delivering a net zero economy as a versatile replacement for high-carbon fuels used

today. It has the potential to help to bring down emissions in vital UK industrial sectors and provide flexible energy for power, heat, and transport.

To reach the scale and cost reductions required to help deliver net zero, we are supporting multiple production routes, including CCUS-enabled and electrolytic hydrogen. As the CCC notes, natural gas will be needed to support hydrogen production for the net zero transition.”

- 7.1.36 A rapid shift to clean energy generation and greater energy efficiency provides the most effective route to ensuring both climate and energy security, helping to avoid risks associated with dependency on fossil fuel imports.

UK Hydrogen Strategy

- 7.1.37 The UK Hydrogen Strategy (August 2021) first set out Government’s vision for the role hydrogen will play in the UK reaching net zero. It also illustrated the scale of the challenge to realise this ambition, noting that while almost no low carbon hydrogen is produced today, the Government estimates that 240-500 TWh could be required by 2050, ‘*which is similar in scale to existing UK electricity use*’.

- 7.1.38 The Government’s recent ‘*Hydrogen Strategy Delivery Update*’ (DESNZ, December 2023) reaffirmed the opportunity and need for low carbon hydrogen in the UK:

“To help deliver deep decarbonisation of heavy industry and transport, as well as helping to build a resilient and secure net zero energy system, while capturing economic benefits and green jobs. Producing, transporting, storing and using hydrogen will require new technology, infrastructure, supply chains, investment, jobs and skills to make our vision for hydrogen in the UK’s future energy mix a reality.”

- 7.1.39 Further analysis on demand for low carbon hydrogen was set out most recently in the Government’s ‘*Hydrogen Transport and Storage Networks Pathway*’ document (Dec ’23) and summarised on page 11 of the ‘*Hydrogen Production Roadmap*’:

- 7.1.40 *“Low carbon hydrogen is a leading option to decarbonise industrial processes that are harder or more expensive to electrify, and can provide cleaner, homegrown energy for power, transport, and potentially heating. It will play a vital role in enabling these sectors to contribute to our aim to have slashed emissions by 78% by 2035 in line with Carbon Budget 6, decarbonise the UK power system by 2035, subject to security of supply, and keep us on track towards delivering our legally binding target of net zero greenhouse gas emissions by 2050.”*

Energy Security

- 7.1.41 As well as being critical to net zero, the Government also recognises hydrogen’s role in supporting greater energy security in the UK. Hydrogen can be used as a long-term store of low carbon energy and could provide critical flexibility for the power system. This potential has come into increasing focus since the invasion of Ukraine in 2022 and has accelerated efforts to develop the hydrogen economy.

- 7.1.42 In April 2022 the Government doubled its hydrogen production capacity ambition to have up to 10 GW of capacity by 2030, as set out in the ‘*British Energy Security Strategy*’. It also expanded the range and number of policy mechanisms being

introduced, including annual allocation rounds for electrolytic hydrogen production and designing hydrogen transport and storage business models by 2025.

- 7.1.43 The Government has indicated that this increased ambition, alongside interim ambitions to have up to 1 GW CCUS-enabled and up to 1 GW electrolytic hydrogen capacity in construction or operation by 2025, has guided its approach to designing funding support for hydrogen projects.

The Role of CCS-Enabled (“Blue”) Hydrogen

- 7.1.44 The Government’s approach to developing hydrogen production encompasses multiple production routes, including both CCS enabled (blue) and electrolytic (green) hydrogen, provided they comply with the UK Low Carbon Hydrogen Standard (LCHS). The LCHS provides clarity about the types of hydrogen production, the Government wishes to bring forward in the developing UK hydrogen economy, and enables it to support investment, innovation and commercialisation of new production technologies which are consistent with the UK’s net zero commitment.
- 7.1.45 The Government’s ‘*Hydrogen Production Roadmap*’ notes that analysis by both DESNZ and the Climate Change Committee has indicated that CCS-enabled ‘blue’ hydrogen will be important in scaling up production into the 2030s and can be consistent with the UK’s net zero commitments. Page 13 highlights that ‘*CCUS-enabled hydrogen plants currently offer the largest individual production capacities of any projects in the current UK pipeline, with the ability to produce hydrogen at consistent baseload from the mid-2020s onwards*’.

Committee on Climate Change view on CCS-enabled hydrogen

- 7.1.46 Commenting on sources of available hydrogen in the 2030s, the Climate Change Committee has stated on page 18 of ‘*Delivering a reliable decarbonised power system*’ (Mar 2023) that ‘*it is implausible that all UK hydrogen demand could be met from domestic non-fossil production by 2035, given likely limits on the rate at which renewable generation capacity can feasibly be built. Zero-carbon electricity must be prioritised for displacing unabated fossil generation and meeting increasing demands from electric vehicles and heat pumps*’.
- 7.1.47 In the CCC’s analysis of options to meet potential hydrogen supply shortfalls, they conclude on page 100 of the same report that ‘*it is unlikely that any contributions from green hydrogen imports, or electricity imports for domestic green hydrogen, would remove the need for blue hydrogen on a 2035 timescale.... Blue hydrogen will therefore have an important part to play in filling the gap between domestic production and demand*’.

The need for Low Carbon Infrastructure in the Local Area

- 7.1.48 A significant portion of carbon emissions from UK industrial clusters come from Britain’s historic engine room, Teesside, a region in the north of England with a proud industrial heritage and home to a diverse cluster of industrial, power and hydrogen companies. These businesses, employing thousands of people, are united by a common challenge – the need to decarbonize their operations to help the UK reach net zero by 2050. By its strength in diversity, the East Coast Cluster stands

ready to remove 50% of the UK's industrial cluster CO2 emissions, protect thousands of jobs and establish the Teesside region as a globally competitive climate-friendly hub for industry and innovation.

7.1.49 Teesside is therefore a prime location to demonstrate hydrogen at a commercial scale. There are multiple industries within the Teesside cluster who have expressed an interest in the use of low carbon hydrogen to support their decarbonisation.

7.1.50 H2Teesside can strengthen Teesside's development into the UK's leading hydrogen hub, creating new high-quality jobs, supporting local education and skills development and kick-starting a highly-skilled UK-based hydrogen supply chain.

Benefits to the Local Area

7.1.51 H2Teesside offers the opportunity to support the decarbonisation of the Teesside cluster. The area is a prime location to demonstrate hydrogen at a commercial scale, for a variety of reasons outline below. This means that the decarbonisation can be carried out in an efficient and cost-effective manner.

- Blue hydrogen production relies on having a suitable transport and storage route for produced CO2. The NEP project, which has been selected by the UK Government as a priority cluster in phase-1 of the Carbon Capture, Usage and Storage (CCUS) cluster sequencing process, is in Teesside. This project provides the infrastructure required to capture and store the CO2 produced during the blue hydrogen production process.
- The Teesside industrial cluster is tightly packed, making it a good location to decarbonise effectively and efficiently. Low carbon blue hydrogen produced at H2Teesside can be transported to customers relatively easily and at low cost.
- Teesside is already a UK energy hub, with access to gas from UK gas fields and offshore wind supply, helping ensure national energy security. H2Teesside along with its sister project HyGreen Teesside and other proposed projects in the area can help Teesside become the UK's leading hydrogen hub.
- As Teesside is an industrial area, existing pipeline corridors can be used where possible to minimise the footprint and impact of the infrastructure required.
- There are multiple industries within the Teesside cluster who have expressed an interest in the use of low carbon hydrogen to support their decarbonisation.
- Teesside has several existing industrial parks which could attract new business entrants, including potential users of low carbon hydrogen, to build upon an initial infrastructure investment.
- Project Union is a National Gas initiative to develop a hydrogen 'backbone' to link industrial clusters around the UK, while East Coast Hydrogen will provide the local infrastructure required to connect the East Coast region to the National Gas network. According to the East Coast Hydrogen Delivery Plan the first phase of Project Union will focus on connecting the Teesside and Humberside industrial clusters. Therefore, low carbon hydrogen projects in Teesside will have the opportunity to connect to the hydrogen backbone from as early as 2028.

- The Proposed Development Site is well positioned to deliver low carbon hydrogen to the Teesside cluster whilst limiting impact on the environment. For example:
 - the Main Site comprises land that has been previously developed and is situated in an industrial setting with few immediate receptors;
 - the Main Site is located directly adjacent to the NEP project, thereby minimising the length of the CO2 connection pipeline;
 - the existing utility and transport infrastructure around the Main Site mean less construction work than might otherwise be required; and
 - re-use of pipeline corridors, where possible, mitigates the potential impact of building through non-purposed land.

7.1.52 H2Teesside intends to be the catalyst for use of low carbon hydrogen in the Teesside cluster. It has the potential to attract new industries keen to take advantage of the availability of low carbon hydrogen for use as a fuel or feedstock.

Economic Benefits

7.1.53 As stated in the socio-economic assessment in the Environmental Statement (ES, Volume I, Document Reference 6.2), it is estimated that there would be a peak construction workforce of 1,300 workers. However, as described in the assessment, 780 net construction jobs would be generated by the construction of the Proposed Development as a worst case. Of these jobs, around 585 are expected to be from the Middlesbrough and Stockton travel to work area (TTWA). It is estimated that these 780 net additional construction jobs would generate £38.1m GVA per annum during the construction phase, of which £28.6m will be generated by the 585 jobs in the Middlesbrough and Stockton TTWA.

7.1.54 During operation, the workforce would be approximately 130 operational workers per day across both Phases 1 and 2. However, as described in the socio-economic assessment in the Environmental Statement (ES, Volume I, Document Reference 6.2), the gross operational employment has been assessed to be 58 gross direct jobs as a worst-case. It is estimated that the 58 net additional operational jobs would generate £2.8 m GVA per annum in this phase, of which £2.1m would be generated by the 44 jobs in the Middlesbrough and Stockton TTWA.

7.1.55 Importantly, by helping local industries to decarbonise their operations through offtake agreements, H2Teesside will help to safeguard existing jobs and businesses in Teesside. It will also help efforts to attract new businesses to the region who are seeking to utilise low carbon hydrogen produced at scale.

Social Benefits

7.1.56 Bp actively collaborates with local councils, authorities, charities, education institutions and various industry bodies to support community development initiatives and social mobility to help enable a just transition in the Tees Valley.

7.1.57 H2Teesside plans to contribute £19.5 million in funding to socio-economic development initiatives in Teesside, with a priority focus in education and skills. This funding will help to inspire the next generation of science, technology, engineering and maths (STEM) talent, develop future skills to meet the demands of the growing renewable and low carbon sector and ensure local people benefit from near-term job opportunities. Bp plans to undertake a community needs assessment and community baseline which includes engaging with local stakeholders to ensure that its social investments are always underpinned by evidence.

7.1.58 For the above reasons the Applicant considers that there is a clear and compelling national need for the Proposed Development as:

- the Proposed Development will make a major contribution toward addressing the need that exists for the shift to clean energy generation and greater energy efficiency which provides the most effective route to ensuring both climate and energy security;
- the Applicant has selected the Site on which to construct and operate the Proposed Development for technical, environmental and commercial reasons; and
- it will provide benefits to the local area to strengthen Teesside's development into the UK's leading hydrogen hub, creating new high-quality jobs, supporting local education and skills development and kick-starting a highly-skilled UK-based hydrogen supply chain.

8.0 POLICY SUPPORT

Policy Documents

- 8.1.1 The application for the DCO is accompanied by a Planning Statement (Document reference 5.2) and Chapter 7 of the ES: Planning Policy Context (Document reference 6.2) containing detailed analysis of the policy relevant to the Proposed Development. A summary of the key policy support is included below.

National Policy Statements

- 8.1.2 An application for development consent, in the form of a DCO must be submitted to the relevant Secretary of State pursuant to Section 37 of the PA 2008 for the Proposed Development. The Planning Inspectorate ('PINS') acts on behalf of the relevant Secretary of State ('SoS') – in this case the SoS for the Department for Energy Security & Net Zero. PINS is responsible for examining the application and making a recommendation to the SoS who then makes the decision as to whether a DCO should be made authorising the construction and operation of the development in question.
- 8.1.3 Development consent is required for the Proposed Development as it is the subject of a Direction dated 22 December 2022 made by the SoS under Sections 35(1) and 35ZA of the PA 2008.
- 8.1.4 Under the PA 2008 regime, the policy framework for examining and determining applications for development consent is provided by National Policy Statements ('NPSs'). The NPSs are the primary policy used by the relevant SoS to examine and determine DCO applications.
- 8.1.5 The NPSs for energy were first designated in July 2011 by the SoS for the Department for Energy and Climate Change ('DECC'). DECC became part of the Department for Business, Energy & Industrial Strategy ('BEIS') in July 2016, which existed until 2023 when BEIS was split to form the Department for Business and Trade (DBT), the Department for Energy Security & Net Zero ('DESNZ') and the Department for Science, Innovation and Technology ('DSIT').
- 8.1.6 In December 2020, the Government launched a review of the July 2011 NPSs to ensure that they reflected the legally binding commitment (through the Climate Change Act 2008 (2050 Target Amendment) Order 2019) to achieve net zero in terms of Green House Gas ('GHG') emissions by 2050 and the Government's energy priorities as set out in the Ten-Point Plan and Energy White Paper. As part of the review, the Government consulted on draft revised NPSs for energy in September 2021.
- 8.1.7 Following the September 2021 consultation on the draft revised NPSs, the Government published the Net Zero Strategy: Build Back Greener (HM Government, 2021), the British Energy Security Strategy ('BESS') (HM Government, 2022) and then Powering Up Britain HM Government, 2023). These documents set out several commitments related to energy, planning reform and the energy NPSs. The Government subsequently made some material updates to the draft revised

energy NPSs and launched a further consultation in March 2023 on those changes, which closed in June 2023.

- 8.1.8 Following the March 2023 consultation, revised NPSs for energy infrastructure were published by the Government on 22 November 2023 and came into force (were designated) on 17 January 2024. The revised NPSs are therefore relevant policy for applications for development consent submitted and accepted for examination following their designation.
- 8.1.9 The following revised energy NPSs are considered to be of relevance to the Proposed Development:
- the Overarching NPS for Energy (EN-1) (DESNZ, 2023);
 - the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (DESNZ, 2023); and
 - the NPS for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023).
- 8.1.10 Where a relevant NPS has been designated, Section 104 of the PA 2008 requires the SoS to determine DCO applications in accordance with the relevant NPSs and appropriate marine policy documents (if any) having regard to: any local impact report produced by the relevant Local Planning Authority (LPA); any matters prescribed in relation to development of the description to which the application relates; and any other matters which the SoS thinks are both 'important and relevant' to their decision, unless this would:
- lead to the UK being in breach of its international obligations;
 - lead to the SoS being in breach of any statutory duty that applies to the SoS;
 - be unlawful by virtue of any enactment;
 - result in the adverse impacts of the development outweighing the benefits; or
 - result in any condition that is prescribed for deciding an application not being in accordance with the NPS.

The Overarching NPS for Energy (EN-1)

- 8.1.11 Paragraph 1.3.5 of revised EN-1 (January 2024) states that where the need for a particular type of energy infrastructure set out at paragraph 1.3.2 is established by the NPS, but that type of infrastructure is outside the scope of one of the technology specific NPSs, EN-1 alone will have effect and be the primary basis for SoS decision making. It goes on to state:
- 8.1.12 *"This will be the case for, but is not limited to, unconventional hydrocarbon extraction sites, hydrogen pipeline and storage infrastructure, Carbon Capture Storage (CCS) pipeline infrastructure and other infrastructure not included in EN-2 or EN-3."*
- 8.1.13 As outlined in Chapter 1: Introduction (ES, Volume I, Document Ref. 6.2), although works to construct the Proposed Development do not fall under the definition of a

NSIP for the purposes of the PA 2008, the Applicant sought a Direction under Section 35 of the PA 2008 from the SoS for all the elements of the Proposed Development to be treated as development for which development consent is required.

- 8.1.14 On 22 December 2022, the SoS issued a Direction under Sections 35(1) and 35ZA of the PA 2008, that the Proposed Development is to be treated as development for which consent is required, including the Hydrogen Production Facility and any aspect of the Hydrogen Pipelines Corridor that is not automatically a NSIP. With regard to Section 35 directions, paragraph 1.3.10 of EN-1 states that:
- 8.1.15 “EN-1, in conjunction with any relevant technology specific NPS, will be the primary policy for Secretary of State decision making on projects in the field of energy for which a direction has been given under section 35.”
- 8.1.16 As such, the Application should be determined under Section 104 of the PA 2008.
- 8.1.17 Section 2.2 ‘Net zero by 2050’ of revised EN-1 confirms the Government’s legally binding target (legislated for through the Climate Change Act 2008 (2050 Target Amendment) Order 2019) of achieving net zero in terms of GHG emissions by 2050.
- 8.1.18 Section 2.3 ‘Meeting net zero’ underlines how the provision of new energy infrastructure will be critical to the UK achieving net zero by 2050. Paragraph 2.3.3 confirms the Government’s objectives for the energy system, which are to ensure our supply of energy always remains secure, reliable, affordable and consistent with meeting the UK’s target to cut GHG emissions to net zero by 2050. It states that this will require a step change in the decarbonisation of our energy system. Paragraph 2.3.4 goes on to state that meeting these objectives necessitates a significant amount of energy infrastructure, both large and small-scale. This includes the infrastructure needed to convert primary sources of energy (e.g. wind) into energy carriers (e.g. electricity or hydrogen), and to store and transport these energy carriers into and around the country. It also includes the infrastructure needed to capture, transport and store carbon dioxide (CO₂).
- 8.1.19 Part 3 of EN-1 deals with ‘The need for new nationally significant energy infrastructure projects’. It explains why the Government sees a need for significant amounts of new large-scale energy infrastructure to meet its energy objectives and why it considers the need for such infrastructure is urgent. However, it notes at paragraph 3.1.2 that it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts. It goes on to state that these impacts will be minimised by the application of policy set out in Parts 4 ‘Assessment Principles’ and 5 ‘Generic Impacts’ of the NPS.
- 8.1.20 One of the matters dealt with in Section 4.2 of Part 4 of EN-1, is ‘The critical national priority for low carbon infrastructure’. Paragraph 4.2.4 confirms that the Government has concluded that there is a ‘critical national priority’ (CNP) for the provision of nationally significant low carbon infrastructure. As stated above, paragraphs 3.4.22 and 3.5.8 of EN-1 confirm that hydrogen and CCS infrastructure are considered CNP infrastructure.

8.1.21 Part 4 ‘Assessment Principles’ of EN-1 under ‘General Policies Considerations’ at paragraph 4.1.3 states that the SoS will start with a presumption in favour of granting development consent for applications covered by the energy NPS given the level and urgency of need for such infrastructure. The assessment principles to be taken into account, as which are set out in Part 4, include matters such as environmental effects; health; marine considerations; environmental and biodiversity net gain; criteria for good design; climate change adaptation and resilience; pollution control; and safety and security considerations, amongst others.

8.1.22 Generic impacts (Part 5 of revised EN-1) are those impacts that arise from the development of all of the types of energy infrastructure covered by the energy NPSs. Generic impacts include matters such as air quality and emissions; flood risk; historic environment; landscape and visual; noise and vibration; socio-economic impacts; and traffic and transport, amongst others.

The NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

8.1.23 The NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) is considered to be relevant as the Proposed Development includes pipeline infrastructure, notably a natural gas supply pipeline and hydrogen distribution pipelines. While the natural gas supply pipeline is not an NSIP in its own right, it is associated development for the purposes of Section 115 of the PA 2008 and paragraph 1.6.3 recognises that pipelines can be associated development by virtue of their connection with an NSIP.

8.1.24 EN-4 confirms (paragraph 1.6.6) that it has effect only in relation to natural gas infrastructure and does not have effect for hydrogen infrastructure, but that it “... may be part of other matters which the Secretary of State thinks are important and relevant to their decision on applications for hydrogen infrastructure, in which case they would need to take it into account.”

The NPS for Electricity Networks Infrastructure (EN-5)

8.1.25 The NPS for Electricity Networks Infrastructure (EN-5) is also considered to be relevant as the Proposed Development includes electricity grid connection infrastructure. While the electricity grid connection is not a NSIP in its own right, it is associated development for the purposes of Section 115 of the PA 2008 and paragraph 1.6.4 of EN-5 states that it will apply to such infrastructure if it constitutes associated development for which consent is sought along with an NSIP or if it is subject to a Section 35 direction such that it should be treated as an NSIP.

8.1.26 As with EN-4, Section 2 of EN-5 deals with the assessment of and technology-specific information to be taken into account in the consideration of applications for or including electricity grid connection infrastructure.

UK Marine Policy Statement (March 2011) (‘UK MPS’)

8.1.27 The UK MPS, adopted in March 2011, provides the policy framework for preparing marine plans and taking decisions affecting the marine environment. It has been prepared and adopted for the purposes of Section 44 of the MCAA 2009 and is

intended to sit alongside terrestrial consenting regimes, including the PA 2008 regime. The MPS was subject to updates in September 2020 relating to how references to European Union (EU) law should be interpreted from 1 January 2021 following the UK's withdrawal from the EU.

8.1.28 Chapter 3 sets out the policy objectives for key activities that take place in the marine environment. Section 3.3 deals specifically with 'Energy production and infrastructure development'. Paragraph 3.3.1 notes that a secure, sustainable and affordable supply of energy is of central importance to the economic and social well-being of the UK. Paragraph 3.3.4 sets out issues that decision makers should consider when examining and determining applications for energy infrastructure. Those of relevance to the Proposed Development, which will connect to a Carbon Capture, Usage and Storage (CCUS) cluster in Teesside, that should be taken into account include:

- the national level of need for new energy infrastructure, as set out in the Overarching NPS for Energy (EN-1);
- the positive wider environmental, societal and economic benefits of CCS as a key technology for reducing CO2 emissions;
- that the physical resources and features that form oil and gas fields or suitable sites for CO2 storage occur in relatively few locations and need first of all to be explored for and can then only be exploited where they are found;
- the UK's programme to support the development and deployment of CCS clusters and in particular the need for suitable locations that provide for the permanent storage of CO2.

North East Inshore and North East Offshore Marine Plan (June 2021)

8.1.29 Marine plans are intended to set out detailed policy and spatial guidance for a particular area. The UK is divided into several marine planning regions with associated plan authorities that are responsible for preparing marine plans. In England, the Marine Management Organisation (MMO) is the plan authority.

8.1.30 The Proposed Development Site lies within the 'North East Inshore Marine Area', which stretches from Flamborough Head in Yorkshire to the Scottish Border. The Plan Area has three main tidal rivers, including the River Tees.

8.1.31 The North East Marine Plan is intended to provide a strategic approach to decision-making on developments within the Marine Plan area, considering future use and providing a clear approach to managing resources, activities and interactions within the area.

8.1.32 Section 2 of the North East Marine Plan sets out the policies to support the delivery of the Plan objectives. Paragraph 32 confirms that the policies cover a wide range of topics, including activities and uses, economic, social and environmental considerations and cross-cutting issues such as integration of decision-making on land and at sea. The policies are set out in detail in the Technical Annex to the North East Marine Plan.

8.1.33 There are no policies that specifically cover hydrogen production or hydrogen infrastructure, however, Policy NE-CCUS-3 is considered to be of some relevance to the Proposed Development as it supports proposals associated with the deployment of low carbon infrastructure for industrial clusters, such as that being proposed on Teesside as part of the East Coast Cluster being advanced by the Northern Endurance Partnership (NEP). The Policy states:

“The government identified potential regional clusters which can be utilised for low carbon development in the Delivering clean growth: CCUS Cost Challenge Taskforce report and the subsequent plan, The UK carbon capture, usage and storage (CCUS) deployment pathway: an action plan. NE-CCUS-3 supports the development of low carbon industrial clusters where low carbon infrastructure, including carbon capture, usage and storage technologies could be deployed. Encouraging developments associated with industrial clusters aims to reduce the capital costs of deploying carbon capture, usage and storage, maximising the economies of scale.”

Other matters that are “important and relevant”

8.1.34 As noted above, Section 104 of the PA 2008 sets out the matters that the SoS must have regard to in determining applications for NSIPs, which can include any other matters which the SoS thinks are “important and relevant” to their decision.

8.1.35 In the case of the Proposed Development, the Applicant considers that other matters that are important and relevant to the SoS’s decision include recent UK Government energy and climate change policy, notably the Ten Point Plan; the EWP; the Net Zero Strategy and the British Energy Security Strategy, amongst others. These documents set out important Government objectives for the production and supply of hydrogen to help decarbonise industry (in order to achieve Net Zero by 2050) and are considered further below.

8.1.36 Other matters that the SoS may consider important and relevant include the policies contained within the NPPF also local development plan policy.

UK Energy and Climate Change Policy

8.1.37 This section provides a brief overview of recent and relevant UK energy and climate change policy, which establishes clear objectives for decarbonising the power and industrial sectors and achieving the Government’s legally binding commitment to achieve Net Zero in terms of greenhouse gas emissions by 2050.

8.1.38 This includes a number of national infrastructure plans and assessments; the Clean Growth Strategy; the UK CCUS Deployment Pathway; the Ten Point Plan; and the Energy White Paper (‘EWP’), the Net Zero Strategy and the British Energy Security Strategy, amongst others

8.1.39 The Applicant considers that these matters, within the context of Section 104 of the PA 2008, are “important and relevant” to the SoS’s decision making on the Proposed Development.

8.1.40 The Proposed Development will support the overarching objective of the Government to continue transitioning the UK to a low carbon economy and meeting the legally binding target of net zero GHG emissions by 2050. The

important role that Hydrogen coupled with CCS/CCUS must play in achieving this transition is confirmed by recent Government energy and climate change policy, including:

- The Ten Point Plan for a Green Industrial Revolution (HM Government, 2020a);
- The Energy White Paper: Powering out net zero future (HM Government, 2020b);
- Industrial Decarbonisation Strategy (HM Government, 2021a);
- North Sea Transition Deal (HM Government, 2021b);
- UK Hydrogen Strategy (HM Government, 2021c);
- Net Zero Strategy: Build Back Greener (HM Government, 2021d);
- British Energy Security Strategy (BESS) (HM Government, 2022);
- Powering up Britain (HM Government, 2023a);
- Powering up Britain: Energy Security Plan (HM Government, 2023b); and
- Powering up Britain: The Net Zero Growth Plan (HM Government, 2023c).

The Ten Point Plan for a Green Industrial Revolution (November 2020)

8.1.41 *'The Ten Point Plan for a Green Industrial Revolution – Building back better, supporting green jobs, and accelerating our path to net zero', was published on 18 November 2020 and is aimed at delivering a 'Green Industrial Revolution' in the UK. The plan has a foreword by the Prime Minister stating that the plan will aim to mobilise £12 billion of Government investment and potentially three times as much from the private sector, to create and support up to 250,000 green jobs.*

8.1.42 The Introduction to the Ten Point Plan (pages 5 and 6) states:

"We will generate new clean power with offshore wind farms, nuclear plants and by investing up to half a billion pounds in new hydrogen technologies. We will use this energy to carry on living our lives, running our cars, buses, trucks and trains, ships and planes, and heating our homes while keeping bills low. And to the extent that we still emit carbon, we will pioneer a new British industry dedicated to its capture and return to under the North Sea. Together these measures will reinvigorate our industrial heartlands, creating jobs and growth, and pioneering world-leading SuperPlaces that unite clean industry with transport and power ...

"The cumulative effect of this plan will be to reduce the UK emissions by 180 million tonnes of carbon dioxide equivalent (Mt CO₂ e) between 2023 and 2032, equal to taking all of today's cars off the road for around two years..."

8.1.43 The 'Ten Points' of the plan are summarised at page 7. Point 2 'Driving the Growth of Low Carbon Hydrogen' is covered at pages 10 to 11 and states (page 10):

"Working with industry the UK is aiming for 5GW of low carbon hydrogen production capacity by 2030. Hubs where renewable energy, CCUS and hydrogen congregate will put our industrial 'SuperPlaces' at the forefront of technological development."

8.1.44 Point 8 ‘Investing in Carbon Capture, Usage and Storage’ (pages 22 and 23) identifies the ambition to capture 10 Mt of CO₂ a year by 2030 and the Government’s commitment to invest up to £1 billion to support the establishment of CCUS in four industrial clusters in areas such as the North East. It goes on to state how CCUS will be developed alongside hydrogen production in these locations.

8.1.45 The Proposed Development will contribute to the Ten Point Plan by delivering low carbon hydrogen at scale within what is an emerging CCUS cluster on Teesside. It will be able to link into the Northern Endurance Partnership (NEP) CCUS infrastructure (also known as Net Zero Teesside). The carbon dioxide created during the hydrogen production process will be captured and compressed for onward transportation and storage, under agreement with the NEP below ground within the Endurance storage site and other nearby carbon dioxide stores in the North Sea that NEP holds carbon dioxide storage licences for.

The Energy White Paper (December 2020)

8.1.46 The Energy White Paper ‘Powering our Net Zero Future’ (EWP) was presented to Parliament in December 2020 and builds on the Ten Point Plan. At the core of the EWP is the commitment to tackle climate change and achieve net zero. The EWP seeks to put in place a strategy for the wider energy system that transforms energy, supports a green recovery, and creates a fair deal for consumers (page 4). As with the Ten Point Plan, the EWP confirms the Government’s support for new H₂ technologies and CCUS drawing upon the resources provided by the North Sea.

8.1.47 The EWP (pages 16 to 17) provides an overview of the Government’s key commitments to put the UK on a course to net zero. These are grouped under several headings and include:

“SUPPORT A GREEN RECOVERY FROM COVID-19 ...

Increasing the ambition in our Industrial Clusters Mission four-fold, aiming to deliver four low-carbon clusters by 2030 and at least one fully net zero cluster by 2040.

Investing £1 billion up to 2025 to facilitate the deployment of CCUS in two industrial clusters by the mid-2020s, and a further two clusters by 2030, supporting our ambition to capture 10 Mt per year by the end of the decade.

Working with industry, aiming to develop 5GW of low-carbon hydrogen production capacity by 2030.”

8.1.48 Chapter 5 ‘Industrial Energy’ sets out the goal for emissions from industry to fall by around 90% from today’s levels by 2050. To achieve this (page 118) the Government:

“...will:

- *Create a sustainable future for UK manufacturing industry through improved energy efficiency and the adoption of clean energy technologies.*
- *Establish the UK as a world leader in the deployment of CCUS and clean hydrogen, supporting up to 60,000 jobs by 2030.”*

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- 8.1.49 The EWP confirms that manufacturing and refineries, which form the bulk of industrial emissions, still account for around 16% of the UK's GHG emissions. About half of those emissions are concentrated in the UK's six major industrial clusters. This includes Teesside (Figure 8.1, page 121) which accounts for 3.9 Mt CO₂e of emissions (2018 figures)."
- 8.1.50 To transform industrial energy, the EWP (page 122) states that the UK cannot rely on energy efficiency alone to reduce emissions in line with the Government's 2050 goal. Manufacturing industry will also need to capture its carbon for onward transport and storage and switch from using fossil fuels to low-carbon alternatives, such as hydrogen.
- 8.1.51 To bring about change in industrial energy, the EWP includes a commitment (page 124) to increase the 'Industrial Clusters Mission' to support the delivery of four low-carbon industrial clusters by 2030 and at least one fully net zero cluster by 2040. The EWP states that the Government will focus on the UK's industrial clusters:
- "... centres where related industries have congregated and can benefit from utilising shared clean energy infrastructure, such as CCUS and low-carbon hydrogen production and distribution. Decarbonisation in clusters will enable economies of scale, reducing the unit cost for each tonne of carbon abated, while clusters provide high quality jobs which tend to pay above the UK average wage."*
- 8.1.52 Chapter 5 of the EWP includes a section on 'Clean Hydrogen' (pages 127 to 128). It identifies that hydrogen will be critical in reducing emissions from heavy industry, as well as in power, heat and transport. Clean hydrogen includes using natural gas and capturing the CO₂ by-product with CCUS or using renewable electricity to split water into hydrogen and oxygen (O₂). It includes commitments to:
- work with industry to develop 5 GW of low-carbon hydrogen production capacity by 2030; and
 - create a Net Zero Hydrogen Fund to support low carbon hydrogen production, providing £240 million of capital co-investment out to 2024/25.
- 8.1.53 The EWP underlines (page 128) that a variety of hydrogen production technologies will be required to satisfy the level of anticipated demand for clean hydrogen by 2050, and that the Government hopes to see 1GW of hydrogen production capacity by 2025 on route to its 2030 goal.
- 8.1.54 The Proposed Development is clearly consistent with the commitments within the EWP as it will make a significant contribution to the delivery of low carbon hydrogen at scale, coupled with CCUS, within one of the UK's major industrial clusters.
- Industrial Decarbonisation Strategy (March 2021)
- 8.1.55 The Industrial Decarbonisation Strategy is the first strategy published by a major economy which sets out how industry can be decarbonised in line with net zero, while remaining competitive and without pushing emissions abroad. It builds on the Ten Point Plan and sets out the Government's vision for a prosperous, low

carbon UK industrial sector by 2050, and aims to provide industry with the long-term certainty it needs to invest in decarbonisation.

- 8.1.56 Chapter 1 ‘Why we need a strategy and our approach’ sets out the Government’s ambition for decarbonising industry in line with net zero. The expectation is that emissions will need to reduce by at least two-thirds by 2035 and by at least 90% by 2050, with 3 Mt CO₂ per annum captured through CCUS and a significant switching to low carbon fuels such as hydrogen by 2030. Significantly, the strategy (page 20) recognises that government should play a key role in the delivery of large infrastructure projects for key technologies such as hydrogen networks where there is a sharing of benefits, and the risk or cost is too great for the private sector.
- 8.1.57 Chapter 2 ‘Getting investors to choose low carbon’ confirms the Government’s commitment (Action 2.2) to put in place funding mechanisms to support the deployment and use of CCUS and low carbon hydrogen infrastructure.
- 8.1.58 The Proposed Development will be well located to make a major contribution to industrial decarbonisation being within a major industrial cluster on Teesside and in close proximity to a number of potential industrial users/offtakers for the low carbon hydrogen that will be produced.

North Sea Transition Deal (March 2021)

- 8.1.59 The North Sea Deal is a transformational sector deal for the offshore oil and gas sector in recognition of the key role that it can play in helping the UK meet its net zero commitments. The document recognises (Foreword, page 6) that with declining output of hydrocarbons from the UK Continental Shelf (UKCS) and a projected decline in domestic demand, there is a clear need for determined action to be taken to build on the proven capabilities and skills within the existing sector to support the transition to net zero. It continues:

“The UK already has the capability and skills within the existing sector to lead in new and emerging energy technologies such as Carbon Capture, Usage and Storage (CCUS) and the hydrogen economy as well as to support the growth of new sectors such as offshore wind...”

“Delivering large-scale decarbonisation solutions will strengthen the position of the existing UK energy sector supply chain in a net zero world, securing new high-value jobs in the UK, supporting the development of regional economies and competing in clean energy export markets.”

- 8.1.60 The North Sea Deal is built on five key outcomes – supply decarbonisation; CCUS; hydrogen; supply chain transformation; and people and skills. These are seen as being closely interlinked, meaning that they must be delivered as an integrated whole for the Deal to achieve its full potential. With regard to hydrogen, the Deal notes (at page 10) that:

“Hydrogen is essential to meeting our net zero commitment in the UK. It could provide a clean source of energy across the economy, from industrial and domestic heat, to heavy transport, and flexible power and energy storage. The UK already has world-leading offshore wind potential and electrolyser capability, alongside

unparalleled CCS sites that the UK can maximise to scale up low carbon hydrogen production.

“The hydrogen commitment in the North Sea Transition Deal focuses on creating the economic environment in which low carbon hydrogen production can flourish. This will help unlock billions of pounds of investment from the sector. The oil and gas sector is positioned to enable the production of low-carbon hydrogen at scale as part of a long-term competitive market, supporting the UK’s ambition to deliver 5 GW of low carbon hydrogen production capacity by 2030.”

- 8.1.61 The Proposed Development is well placed to support the commitments set out in the North Sea Transition Deal, being able to link into the NEP infrastructure (part of the East Coast Cluster), which will make use of offshore skills, capabilities and resources.

UK Hydrogen Strategy (August 2021)

- 8.1.62 The UK Hydrogen Strategy sets out the Government’s approach to developing a thriving low carbon hydrogen sector in the UK to meet its ambition for up to 5 GW of low carbon hydrogen production capacity by 2030.

- 8.1.63 Section 1.3 of Chapter 1 ‘The UK’s hydrogen opportunity’ sets out the Government’s ‘twin track’ approach to hydrogen production, which seeks to capitalise on the UK’s potential to produce large quantities of both electrolytic ‘green’ and CCUS enabled ‘blue’ hydrogen. It states that the UK has the technology, know-how and storage potential to scale up CCUS across the country, unlocking new routes to CCUS-enabled hydrogen production (page 10). It goes on to state:

“Early deployment of CCUS technology and infrastructure will likely be located in industrial clusters. Many of these are in coastal locations, with important links to CO2 storage sites such as disused oil and gas fields. Government aims to establish CCUS in four industrial clusters by 2030 at the latest, supporting our ambition to capture 10 Mt/ CO2 per annum.

“In turn, industrial clusters and wider industry are significant potential demand centres for low carbon hydrogen. Today, numerous industrial sectors from chemicals to food and drink are exploring the role that hydrogen can play in their journey to net zero. UK Research and Innovation’s (UKRI’s) Industrial Decarbonisation Challenge provides up to £170 million – matched by £261 million from industry – to invest in developing industrial decarbonisation infrastructure including CCUS and low carbon hydrogen.”

- 8.1.64 Figure 1.3 at Chapter 1 of the strategy identifies Teesside as a location for both green and blue (CCUS-enabled) hydrogen production (page 11).

- 8.1.65 The strategy on page 33 highlights the potential of CCUS-enabled blue hydrogen production, stating:

“Our Hydrogen Production Cost 2021 report suggests that, under central fuel price assumptions, CCUS-enabled methane reformation is currently the lowest cost low carbon hydrogen production technology. Given the potential production capacity of CCUS-enabled hydrogen plants, we would expect this route to be able to deliver a

greater scale of hydrogen production as we look to establish a UK hydrogen economy during the 2020s.”

- 8.1.66 Since the UK Hydrogen Strategy was published (DESNZ, 2023b), the BESS (HM Government, 2022) has doubled the UK’s hydrogen production ambition from 5 GW to 10 GW by 2030. This was reflected in the ‘Hydrogen Strategy update to the market’ issued to BEIS in December 2022 (BEIS, 2022). The December 2022 Hydrogen Strategy update to the market (BEIS, 2022) also included the announcement on shortlisted hydrogen projects in the BEIS Phase 2 Cluster Sequencing Process (Cluster sequencing Phase-2: shortlisted projects (power CCUS, hydrogen and ICC), August 2022)), which identifies ‘bpH2Teesside’ as one of the shortlisted projects in the East Coast Cluster, to have moved to the due diligence stage of the process. The latest Hydrogen Strategy update to the market (August 2023) (DESNZ, 2023b) maintains the ambition and commitment to deliver hydrogen production at scale, including blue hydrogen, and the Proposed Development will make a significant contribution toward that.

Net Zero Strategy: Build Back Greener (October 2021)

- 8.1.67 The ‘Net Zero Strategy: Build Back Greener’ expands on key commitments in the Ten Point Plan and the EWP, and sets out the next steps the Government proposes to take to cut emissions, seize green economic opportunities and leverage further private investment in net zero. The strategy sets an indicative delivery pathway for emission reductions to 2037 by sector. It is intended to put the UK on the path for Carbon Budget Six and ultimately on course for net zero by 2050.
- 8.1.68 Regarding power, the Net Zero Strategy states that the UK will fully decarbonise its power system by 2035 subject to security of supply. It states that the power system will consist of abundant, cheap renewables, cutting edge new nuclear power stations, underpinned by flexibility including storage, gas with CCUS and hydrogen (page 19).
- 8.1.69 For industry, the Net Zero Strategy states (page 21) that it will deliver four CCUS clusters, capturing 20-30 Mt CO₂ across the economy, including 6 Mt CO₂ of industrial emissions, per year by 2030. This will be done by supporting industry to switch to cleaner fuels, such as low carbon hydrogen alongside renewable energy and CCUS. These clusters, including the East Coast Cluster, which includes Teesside, could have the opportunity to access support under the Government’s CCUS programme (£1 billion). The Net Zero Strategy also states that the Government has set up the Industrial Decarbonisation and Hydrogen Revenue Support Scheme, providing up to £140 million to fund new hydrogen and industrial carbon capture business models. This is in addition to £240 million Net Zero Hydrogen Fund.
- 8.1.70 Whilst the Net Zero Strategy was the subject of a successful Judicial Review in 2022, the Court’s decision did not quash the strategy, but instead ordered the Government to provide an update to that strategy by the end of March 2023 to add further explanation as to how the Government’s aims set out in the Net Zero Strategy would be met. On 30 March 2023, the Government published the Carbon Budget Delivery Plan which fulfils the statutory duties under the Climate Change

Act 2008 (Section 14) setting out the Government's proposals and policies to enable carbon budgets to be met, and includes the deployment of the four CCUS clusters by 2030. Further to this, the Carbon Budget Delivery Plan states that *"The approach set out in our October 2021 plan to deliver net zero, the Net Zero Strategy, remains the right one. The independent Net Zero Review led by Chris Skidmore MP supported this position."*

British Energy Security Strategy (April 2022)

- 8.1.71 The BESS was published largely in response to soaring energy prices as a result of a sudden surge in demand following the Coronavirus (COVID-19) pandemic, compounded by the Russian invasion of Ukraine. Much of the focus of the strategy is upon providing financial assistance to families and businesses struggling with higher energy bills. It also looks at improved energy efficiency, reducing the amount of energy the UK need and addressing the underlying vulnerability to international oil and gas prices by reducing the UK's dependence on imported oil and gas.
- 8.1.72 Notably, the BESS identifies the importance of low carbon hydrogen, with an increased commitment to achieve up to 10 GW of hydrogen production by 2030, including CCUS-enabled blue hydrogen. The Proposed Development will contribute 1.2 GW of low carbon hydrogen toward this goal.

Powering Up Britain policy papers (March 2023)

- 8.1.73 On 30 March 2023 the Government published the 'Powering Up Britain' suite of policy documents comprising of 'Powering Up Britain', the 'Powering Up Britain: Energy Security Plan' and 'Powering Up Britain: Net Zero Growth Plan', following the judicial review of the Net Zero Strategy. All three documents provide details of the Government's measures to increase domestic energy production, ensure resilience in the energy supply and achieve net zero.
- 8.1.74 Regarding hydrogen, the Energy Security Plan sets out the measures to support the development of business models and finance for hydrogen projects, including the launch of Strands 1 and 2 of the Net Zero Hydrogen Fund. It also the shortlisted projects for the first electrolytic hydrogen allocation round. In addition to this, the Government is entering into bilateral negotiations with two CCUS-enabled hydrogen projects.
- 8.1.75 The Net Zero Growth Plan sets out the actions by the Government to support the delivery of the hydrogen sector, consolidating measures set out in previous strategy documents such as the ambition to deliver 2 GW of low carbon hydrogen by 2025 and 10 GW by 2030. The plan also reiterates the measures outlined in the Energy Security Plan.

National Planning Policy Framework (NPPF)

- 8.1.76 The National Planning Policy Framework (NPPF) was introduced in March 2012 and last updated in December 2023 (DLUHC, 2023). It sets out the Government's planning policies for England. It is a material consideration in planning decisions. Although paragraph 5 of the NPPF confirms that NSIPs are to be determined in accordance with the decision-making framework of the PA 2008 and relevant NPPS,

decision-making on NSIPs by the SoS should, in accordance with Section 104 of the PA 2008, also take account of any other matters which the SoS thinks are both “important and relevant”, which may include the NPPF.

- 8.1.77 Central to the NPPF is “the presumption in favour of sustainable development” as set out at Paragraph 11. For decision-taking, this means approving applications that accord with the development plan without delay.
- 8.1.78 The NPPF is supportive of infrastructure projects. One of the methods of fulfilling the objective of sustainable development listed at paragraph 8 under ‘a) an economic objective’ is through the “provision of infrastructure”.
- 8.1.79 Paragraph 163 states that when determining applications for renewable and low carbon development, there should be no requirement for applicants to demonstrate the overall need for renewable or low carbon energy and that applications for renewable or low carbon development should be approved if their impacts are (or can be made) acceptable.
- 8.1.80 NPPF policies of particular relevance to the Proposed Development include:
- Building a strong, competitive economy (Chapter 6);
 - Making effective use of land (Chapter 11);
 - Meeting the challenge of climate change, flooding and coastal change (Chapter 14); and
 - Conserving and enhancing the natural environment (Chapter 15).

Local Planning Designations

- 8.1.81 The Site encompasses land within the administrative boundaries of both Redcar and Cleveland Borough Council (‘RCBC’), Stockton-on-Tees Borough Council (‘STBC’) and Hartlepool Borough Council (‘HBC’) on either side of the river Tees. RCBC, STBC and HBC represent the ‘host local authorities’ for the Proposed Development for the purposes of Section 43 of the PA 2008.
- 8.1.82 The Main Site is located within the administrative boundary of Redcar and Cleveland Borough Council (RCBC).
- 8.1.83 The Hydrogen Distribution Network and other connections involve crossings of the River Tees and encompass land within the administrative boundaries of RCBC, Stockton on Tees Borough Council (STBC) and Hartlepool Borough Council (HBC).
- 8.1.84 The relevant development plan documents (‘DPDs’) and supplementary planning documents for the Proposed Development are as follows:
- Redcar & Cleveland Local Plan and Policies Map (adopted May 2018; RCBC, 2018a);
 - The South Tees Area SPD (adopted May 2018, RCBC,2018b);
 - Stockton-on-Tees Borough Council Local Plan (adopted January 2019; STBC, 2019);
 - The Hartlepool Local Plan (adopted May 2018;HBC,2018); and

- The Tees Valley Joint Minerals and Waste DPDs (adopted September 2011; Darlington Borough Council et al., 2011.)

8.1.85 An overview of the above DPDs and the South Tees SPD, in so far as they contain planning allocations/designations (and related policies) of relevance to the Proposed Development is provided below.

The Redcar & Cleveland Local Plan

- 8.1.86 A large part of the Site, including the whole of the Main Site, is allocated in the Redcar & Cleveland Local Plan as a 'Protected Employment Area', which is subject to Policy ED6 'Promoting Economic Growth'. Policy ED6 seeks to promote industry and port related uses within the South Tees Area and states that development proposals should have regard to the South Tees Area SPD and that these will be supported where they positively contribute towards growth and regeneration. It goes on to state that where appropriate, proposals will need to demonstrate that there will be no adverse effects on the integrity of the Teesmouth and Cleveland Coast Special Protection Area and Ramsar site, or other European designated nature conservation sites. Development proposals will also be encouraged to improve the quality of the environment.
- 8.1.87 Parts of the Site lie within the STDC Teesworks/South Tees Area that is subject to Policy LS4 of the Local Plan. This Policy builds on ED6 and aims to support the delivery of significant economic growth and job opportunities in the area, including encouraging clean and efficient industry to help reduce carbon emissions and the development of Carbon Capture and Storage ('CCS') to decarbonise the local economy. The Policy also seeks to improve the environmental quality of the area and to protect the nearby nature conservation sites. Clearly the Proposed Development is consistent with Policy LS4 as it would help decarbonise the local economy while promoting economic growth and job opportunities.
- 8.1.88 The key Redcar and Cleveland planning allocations/designations and related policies that apply to the Site are listed below:
- Development Limits – Policy SD3.
 - Protected Employment Area – Policy ED6.
 - South Tees Development Corporation Area – Policy LS4
 - 30km wind farm safeguarding area for Durham Tees Valley Airport – Policy SD6.
 - Sensitive Landscape Areas – Policy N1.
 - Restoration Landscape Areas – Policy N1;
 - Strategic Landscape Areas – Policy N2;
 - Green Wedge – Policy N2;
 - Primary Open Spaces – Policy N3;
 - Special Protection Areas (SPAs) – Policy N4;
 - Sites of Special Scientific Interest (SSSIs) – Policy N4;

- 6 km Special Protection Area (SPA) Buffer Zone – Policy N4;
- Local Wildlife Sites – Policy N4;
- Marine Dredged Sand and Gravel – Policies MWC4 and MWC5;
- General Location for Large Waste Management Facilities – Policy MWC8;
- South Tees Eco Park – Policies MWP8 and MWP10(b); and
- Safeguarded Wharves – Policy MWC11.

The South Tees Area Supplementary Planning Document

- 8.1.89 Parts of the Proposed Development Site lie within the boundary of the South Tees Development Corporation (STDC) area, which is now known as ‘Teesworks’. STDC is a Mayoral Development Corporation, established to further the economic development of the South Tees Area through physical, social and environmental regeneration. However, RCBC retains planning powers for the area and continues to act as the local planning authority in respect of planning policy and development management and the processing and determination of planning applications.
- 8.1.90 STDC has produced a Master Plan (the ‘South Tees Regeneration Master Plan’) to provide a flexible framework for the regeneration of the Teesworks/South Tees Area (STDC, 2019). The Master Plan was prepared throughout 2017 (later revised in 2019 as STDC (2019)) as a supporting vision and development strategy document to inform the preparation of a Supplementary Planning Document (SPD) by RCBC for the South Tees Area. Following consultation, the Master Plan was launched alongside the South Tees Area SPD, which was formally adopted by RCBC in May 2018 (RCBC, 2018b). The Master Plan has no formal planning status, however, the South Tees Area SPD is a material planning consideration.
- 8.1.91 As a result, consideration has been given to the sections of the South Tees SPD relevant to the Proposed Development.
- 8.1.92 The South Tees Area SPD shows indicative clusters for key industries and processes within the South Tees Area. The Main Site is identified primarily as part of clusters for ‘manufacturing’ and ‘manufacturing and energy’ and ‘port-related uses’, while within its vicinity clusters are shown for ‘port-related uses’, ‘Redcar Bulk Terminal’, ‘other processing, advanced manufacturing and training, testing and research’.
- 8.1.93 At Chapter 4, the SPD sets out site specific development principles for the five main zones of the South Tees Area (as shown by Figure 6 of the SPD). These are the North Industrial Zone; North East Industrial Zone; Central Industrial Zone; South Industrial Zone; and Coastal Community Zone. The North Industrial Zone, which encompasses the Main Site is identified for development proposals relating to port related industry, major space users/large scale manufacturing, energy innovation, power generation and storage, bulk materials and mineral processing.
- 8.1.94 The SPD also sets out several ‘*Development Principles*’ to guide the development of the Teesworks/South Tees Area. Those of particular relevance to the Proposed Development include:

- Development Principle STDC6: Energy Innovation;
- Development Principle STCD7: Natural Environmental Protection and Enhancement;
- Development Principle STDC10: Utilities; and
- Development Principle STDC11: North Industrial Zone.

8.1.95 Development Principle STDC6 ‘Energy Innovation’ (pages 33 to 34) supports new energy generation within the area, including the promotion of renewable energy and innovative energy projects. STDC11 ‘North Industrial Zone’ states (page 49) that STDC will encourage development proposals relating to port related industry, major space users/large scale manufacturing, energy innovation, power generation and storage and bulk materials and processing within this area.

Stockton on Tees Borough Council Local Plan

8.1.96 The key planning allocations/designations and related policies that apply to the parts of the Site within the administrative boundary of STBC are listed below. The parts of the Site within STBC comprise sections of the Hydrogen Distribution Network:

- Development Limits – Policy SD2, SD3, SD4 and SD5;
- General Employment Allocation/Locations – Policies SD4 and EG1;
- Employment Areas/Specialist Use Locations – Policies SD4 and EG4;
- Reserve Housing Land – Policies H1 and H2;
- Durham Tees Valley Airport Safeguarding Area – Policy EG5;
- Internationally Designated Sites (SPAs and Ramsar sites) – Policies SD5 and ENV5;
- Nationally Designated Sites (SSSIs) – Policies SD5 and ENV5;
- Locally Designated Sites (Local Nature Reserves) – Policies SD5 and ENV5;
- Locally Designated Sites (Local Wildlife Sites) – Policies SD5, ENV5; and
- Open Space – Policies SD5 and ENV5.

Hartlepool Borough Local Plan

8.1.97 The key planning allocations/designations and related policies that apply to the parts of the Site within the administrative boundary of HBC are listed below. The parts of the Site within HBC are like those parts of the Site within STBC understood to be pipelines associated with the Hydrogen Distribution Network:

- Development Limits – Policies LS1 and RUR2;
- Strategic Gaps – Policy LS1;
- Underground Storage – Policy EMP6;
- Safeguarded Land for Future Road Schemes – Policy INF2;

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- Internationally Designated Sites – Policy NE1a; and

9.0 SPECIAL CONSIDERATIONS

9.1.1 This section provides information on parts of the Order Limits and to which special considerations apply under the PA 2008 – Crown Land and Open Space Land. There are no other relevant special considerations in respect of the Site.

9.1.2 It also provides information on statutory undertakers and those with apparatus, and the protective provisions which apply.

Crown Land

9.1.3 There are Crown interests within the Order Limits as follows:

- Plots 11/67, 11/68, 11/69, 11/70, 11/71, 11/72, 11/73, 11/74, 11/75, 11/76, 11/77, 11/79, 11/82, 11/85, 11/91, 11/92, 11/93, 11/95, 11/96 and 11/97 being land of river (River Tees), bed and banks thereof; and
- Plots 6/10, 6/11, 7/2, 7/3 and 7/4, 7/5, 7/6, 7/12, 7/13, 7/14, 7/15, 7/16, 7/17, 7/22, 7/23, 7/26 and 7/27 being land of river (Greatham Creek), bed and banks thereof.

9.1.4 All are owned by The King’s Most Excellent Majesty and are therefore ‘Crown Land’. The areas are shown on the Special Category Land and Crown Land Plans (Document Reference 2.3).

9.1.5 The Order (Document Reference 4.1) includes the standard article providing that the Order does not prejudicially affect any estate (etc.) of the Crown, and that the undertaker may not enter on or take any Crown land other than with the consent of the appropriate authority (article 42). Articles permitting powers of compulsory acquisition (22 and 25) specifically provide that they are subject to Article 42. The Book of Reference (Document Reference 3.1) also excludes interests belonging to the Crown in the description of the relevant plots.

9.1.6 The Applicant has been negotiating with the Crown Estate Commissioners in order to secure the rights and access necessary to carry out the relevant parts of Work No. 6A.1 and to obtain the consent of the Crown to the inclusion of provisions applying in relation to Crown land (as required by section 135 of the PA 2008). The Applicant will continue these discussions following submission of the Application.

Open Space Land

9.1.7 The PA 2008 contains provisions regulating whether and how powers of compulsory acquisition in respect of open space land can be included in a development consent order, and which differ depending on whether the Applicant proposes to acquire either all interests in the relevant open space land or whether it proposes to acquire new rights over the open space land. Both of these are relevant to the Application.

9.1.8 For the purposes of the PA 2008 (and sections 131 and 132 in particular), “open space” has the same meaning as in section 19 of the Acquisition of Land Act 1981:

“means any land laid out as a public garden, or used for the purposes of public recreation, or land being a disused burial ground.”

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- 9.1.9 Land within Order Land which is open space and over which powers of compulsory acquisition are sought is shown marked pink with blue hatching on the Special Category Land and Crown Land Plans (Document Reference 2.3) and the plots are described and identified in the Book of Reference (Document Reference 3.1).
- 9.1.10 Section 131 of the PA 2008 applies to the compulsory acquisition of land forming part of a common, open space or fuel or field garden allotment, except where section 132 applies (see further below). There are no commons or allotments within the Order Limits.
- 9.1.11 Section 131(3) of the PA 2008 states that the Order, to the extent that it authorises the compulsory acquisition of open space land, will be subject to special parliamentary procedure unless:
- the Secretary of State is satisfied that one of the exceptions under S131(4) to (5) applies; and
 - that fact, and the exception under the relevant subsection of S131, are recorded in the Order (or other document containing the Order).
- 9.1.12 The exceptions in S131(4A), S131(4B) and S131(5) are not relevant to the Proposed Development.
- 9.1.13 Section 131(4) provides that special parliamentary procedure is not required if replacement land has been or will be given in exchange for the order land (i.e. the open space), and the replacement land has been or will be vested in the prospective seller and subject to the same rights, trusts and incidents as attach to the order land.
- 9.1.14 For the purposes of Section 131, ‘replacement land’ means:
- “land which is not less in area than the order land and which is no less advantageous to the persons, if any, entitled to rights of common or other rights, and to the public”.*
- 9.1.15 The Applicant is seeking the application of Section 131(4) in respect of part of the open space at Cowpen Bewley Woodland Park, as set out below. See paragraph 9.1.23 onwards.
- 9.1.16 Section 132 of the PA 2008 applies to the compulsory acquisition of new rights over land forming part of a common, open space or fuel or field garden allotment. As noted above, there are no commons or allotments within the Order Limits.
- 9.1.17 Section 132(2) of the PA 2008 states that the Order, to the extent that it authorises the compulsory acquisition of a right over open space land by the creation of a new right over land, will be subject to special parliamentary procedure unless:
- the Secretary of State is satisfied that one of the exceptions under S132(3) to (5) applies; and
 - that fact, and the exception under the relevant subsection of S132(3) to (5), are recorded in the Order (or other document containing the Order).
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- 9.1.18 The exceptions in S132(4A), S132(4B) and S132(5) are not relevant to the Proposed Development.
- 9.1.19 Section 132(3) provides that special parliamentary procedure is not required if the Order Land, when burdened with the rights under the Order, will be “no less advantageous than it was before” to the following persons:
- the persons in whom it is vested;
 - other persons, if any, entitled to rights of common or other rights; and
 - the public.
- 9.1.20 The Applicant is seeking the application of Section 132(3) in respect of the open space at Coatham Marsh, as set below. See paragraph 9.3.34 onwards.
- 9.1.21 Section 132(4) provides that special parliamentary procedure is not required if replacement land has been or will be given in exchange for the order land (i.e. the open space over which new rights are sought), and the replacement land has been or will be vested in the prospective seller and subject to the same rights, trusts and incidents as attach to the order land.
- 9.1.22 For the purposes of Section 132, ‘replacement land’ means
“land which will be adequate to compensate the following persons for the disadvantages which result from the compulsory acquisition of the order right—
(a) the persons in whom the order land is vested,
(b) the persons, if any, entitled to rights of common or other rights over the order land, and
(c) the public.”
- 9.1.23 The Applicant is seeking the application of Section 132(4) in respect of part of the open space at Cowpen Bewley Woodland Park, as set below. See paragraph 9.1.23 onwards.

Open Space Land for which Replacement Land is to be Provided

- 9.1.24 The parts of the Order Land which are open space and for which replacement land is to be provided are set out below in Table 9.1: Interests in the Lost Open Space (“the Lost Open Space”). This table sets out the plot numbers and descriptions, the person in whom the land is vested, and whether all interests or new rights are sought to be compulsorily acquired (and therefore whether s131 or s132 applies).

Table 9.1: Interests in the Lost Open Space

PLOT NO.	PLOT DESCRIPTION	FREEHOLD OWNER	LESSEES OR TENANTS	OCCUPIER	INTEREST SOUGHT BY APPLICANT

4/5	Permanent acquisition of 3024.37 sqm of woodland (Cowpen Bewley Woodland Park), east of Cowbridge Lane, Cowpen Bewley, Billingham (CE133734 – Absolute Freehold) (CE216965 – Freehold Mines and Minerals)	Northern Gas Networks Limited Church Commissioners for England (in respect of mines and minerals)		Northern Gas Networks Limited National Gas Transmission PLC (in respect of gas main) Stockton-on-Tees Borough Council (in respect of public right of way)	Permanent freehold acquisition
4/6	Permanent acquisition of 3053.56 sqm of woodland (Cowpen Bewley Woodland Park) and public rights of way, south of Cowbridge Lane, Cowpen Bewley, Billingham (CE133628 – Absolute Freehold) (CE216965 – Freehold Mines and Minerals)	Northern Gas Networks Limited Church Commissioners for England (in respect of mines and minerals)		Northern Gas Networks Limited National Gas Transmission PLC (in respect of gas main) Stockton-on-Tees Borough Council (in respect of public right of way)	Permanent freehold acquisition
4/25	Permanent acquisition of 2928.49 sqm of woodland (Cowpen Bewley Woodland Park), south of Cowbridge Lane, Cowbridge Lanem Cowpen Bewley, Billingham (CE118926 – Absolute Freehold) (CE216965 – Freehold Mines and Minerals)	Northern Gas Networks Limited Church Commissioners for England (in respect of mines and minerals)		Northern Gas Networks Limited Northern Powergrid (Northeast) PLC (in respect of underground electricity cables) National Gas Transmission PLC (in	Permanent freehold acquisition

				respect of gas main)	
4/28	Permanent acquisition of 2408.46 sqm of woodland (Cowpen Bewley Woodland Park), south of Cowbridge Lane, Cowpen Bewley, Billingham (CE157420 – Absolute Freehold) (CE216965 – Freehold Mines and Minerals)	Northern Gas Networks Limited Church Commissioners for England (in respect of mines and minerals)	National Gas Transmission PLC (in respect of gas main)	Northern Gas Networks Limited National Gas Transmission PLC (in respect of gas main)	Permanent freehold acquisition
4/29	Permanent acquisition of 303.16 sqm of woodland (Cowpen Bewley Woodland Park), south of Cowbridge Lane, Cowpen Bewley, Billingham (CE118976 – Absolute Freehold) (CE157420 – Absolute Freehold) (CE216965 – Freehold Mines and Minerals)	Northern Gas Networks Limited		Northern Gas Networks Limited National Gas Transmission PLC (in respect of gas main)	Permanent freehold acquisition
4/30	Permanent acquisition of new rights over 7725.69 sqm of woodland (Cowpen Bewley Woodland Park), ponds and public right of way, east of Cowbridge Lane, Cowpen Bewley, Billingham (CE133734 –	Stockton-on-Tees Borough Council Church Commissioners for England (in respect of mines and minerals)		Stockton-on-Tees Borough Council Network Rail Infrastructure Limited (in respect of apparatus) Northern Powergrid	Permanent acquisition of new rights

	<p>Absolute Freehold) (CE216965 – Freehold Mines and Minerals)</p>			<p>Limited (in respect of apparatus)</p> <p>Northern Powergrid (Northeast) PLC (in respect of underground electricity cables)</p> <p>Northern Gas Networks Limited (in respect of gas main)</p> <p>Stockton-on- Tees Borough Council (in respect of public right of way.</p>	
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- 9.1.25 The Lost Open Space is to be used by the Applicant for the purposes of constructing and maintaining part of Work No. 6, being the Hydrogen Distribution Network, and in particular Work No. 6A.2 (hydrogen pipelines for the transport of hydrogen gas) and Work No. 6B.2 (above ground installation connecting Work No. 6A.2 to the existing Cowpen Bewley Natural Gas AGI). The existing Cowpen Bewley Natural Gas AGI is situated within Cowpen Bewley Woodland Park, and the location of this connection is therefore fixed.
- 9.1.26 The location of these works is shown on the Works Plans (Document Reference 2.4).
- 9.1.27 The Applicant’s proposed works within Cowpen Bewley Woodland Park will in part prevent access by the public to areas of existing open space, in particular where for reasons of health and safety, and security, the Applicant will need to permanently fence certain areas. In addition, where the Hydrogen Distribution Network (Work No. 6A.2) will run through Cowpen Bewley Woodland Park (plot 4/30), it will be necessary for the Applicant to remove trees and to prevent their re-growth over the hydrogen pipeline. This area of Cowpen Bewley Woodland Park will therefore be altered by the nature of the works and ongoing restrictions, and whilst the Applicant may be able to permit some public access, the extent or amenity of this may be reduced. The Applicant has therefore decided to provide replacement

open space in respect of permanent rights acquisition plot 4/30 as shown on the Special Category and Crown Land Plans (Document Reference 2.3) in addition to permanent freehold acquisition plots 4/5, 4/6, 4/25, 4/28 and 4/29.. These plots taken together are defined as the ‘Lost Open Space’.

9.1.28 Details of the proposed replacement open space (“the Replacement Land”) are set out in Table 9.2: The Proposed Replacement Open Space Land .

Table 9.2: The Proposed Replacement Open Space Land

PLOT NO.	PLOT DESCRIPTION	FREEHOLD OWNER	PERSON IN WHOM LAND TO BE VESTED
4/94	Permanent acquisition of 11711.78 sqm of agricultural land, east of Seal Sands Link Road (A1185), Billingham (CE210987 – Absolute Freehold)	Church Commissioners for England	Northern Gas Networks Limited
4/95	Permanent acquisition of 7938.18 sqm of agricultural land, east of Seal Sands Link Road (A1185), Billingham (CE210987 – Absolute Freehold)	Church Commissioners for England	Stockton-on-Tees Borough Council

9.1.29 The total area of the Lost Open Space is 1.945 hectares, split between the plots in which all interests are to be acquired (1.172 hectares) and the plots in which new rights are to be acquired (0.773 hectares).

9.1.30 The total area of the Replacement Land is 1.964 hectares – this is in excess of the Lost Open Space, and therefore complies with the requirement in S131 that the replacement land is not less in area than the relevant part of the Lost Open Space (to which S131 applies). Similarly, the Replacement Land will be adequate to compensate for the Lost Open Space to which S132 applies.

9.1.31 It is also relevant to consider qualitative factors, in considering the statutory tests for replacement land under both S131 and S132. The Applicant considers that the following are highly relevant, and demonstrate that both S131(4) and S132(4) are complied with:

- the Replacement Land is contiguous with Cowpen Bewley Woodland Park, being adjacent to its current northern edge;
- the Replacement Land will be joined with and become part of Cowpen Bewley Woodland Park, with those in whom the Lost Open Space is vested and the public able to enjoy the Replacement Land alongside and as part of using the existing parts of Cowpen Bewley Woodland Park;

- under the drafting provided in the DCO, the Applicant is obliged to obtain the local planning authority's approval to a scheme for the layout of the Replacement Land, and then to implement that scheme within a specified period of time (no later than 24 months from the undertaker taking possession of the Lost Open Space Land, unless otherwise agreed with the relevant planning authority). The Secretary of State is able to take such anticipated improvements to the Replacement Land into account, particularly noting that they are secured by the Order (Document Reference 4.1) via Article 29; and
 - the public will be able to use the Replacement Land in the same manner and for the same recreational purposes as the Lost Open Space.
- 9.1.32 The Applicant has liaised with those in whom the Lost Open Space is vested, being Stockton-on-Tees Borough Council and Northern Gas Networks. Stockton-on-Tees Borough Council also manages Cowpen Bewley Woodland Park.
- 9.1.33 Voluntary agreements are being progressed with both Stockton-on-Tees Borough Council and Northern Gas Networks. .
- 9.1.34 As permitted by S131(11) and S132(11), the Order (Document Reference 4.1) provides for the Lost Open Space to be discharged from rights, trusts and incidents, and for the Replacement Land to vest in the prospective sellers (Stockton-on-Tees Borough Council and Northern Gas Networks) and for it to be subject to the same rights, trusts and incidents as the Lost Open Space. This is achieved in Article 29(2) and (3), with Replacement Land access rights addressed in Article 29(4) and (5). As Stockton-on-Tees Borough Council manages the existing Cowpen Bewley Woodland Park and is anticipated will manage all of the Replacement Land (once laid out by the Applicant), but Sections 131 and 132 require that the Replacement Land is vested in the two 'prospective sellers', Article 29 also provides for Stockton-on-Tees Borough Council to have rights over the Northern Gas Networks part of the Replacement Land, in order to manage it. This is achieved via Article 29(5), but with Stockton-on-Tees Borough Council and Northern Gas Networks able to agree that a different arrangement may apply between them.

Acquisition of New Rights in Open Space Land Where No Replacement Land to be Provided

- 9.1.35 There are two areas within the Order Land which are open space and for which no replacement land is to be provided. Each is addressed below.

Cowpen Bewley Access Track Open Space

- 9.1.36 Parts of the Order Land which are open space and for which no replacement land is to be provided are plots 4/4 and 4/24 located within Cowpen Bewley Woodland Park and referred to as the 'Cowpen Bewley Access Track Open Space.' These are plots over which the public currently have access but form access tracks rather than woodland.
- 9.1.37 Details of the plots that comprise the Cowpen Bewley Access Track Open Space, and related ownership are set out in Table 9-3: Interests in Cowpen Bewley Access Track Open Space'.

Table 9.3:: Interests in the Cowpen Bewley Access Track Open Space

PLOT	FREEHOLD OR REPUTED FREEHOLD OWNER	LESSEES OR TENANTS OR REPUTED LESSEES OR TENANTS	OCCUPIER OR REPUTED OCCUPIER
Plot 4/4	Stockton-on-Tees Borough Council Church Commissioners for England (in respect of mines and minerals)		Stockton-on-Tees Borough Council
Plot 4/24	Stockton-on-Tees Borough Council Church Commissioners for England (in respect of mines and minerals)		Stockton-on-Tees Borough Council National Gas Transmission PLC (in respect of gas main) Northern Gas Networks Limited (in respect of gas main) Northern Powergrid (Northeast) PLC (in respect of underground electricity cables) Stockton-on-Tees Borough Council (in respect of public right of way)

- 9.1.38 The works forming part of the Proposed Development that will be located on the Cowpen Bewley Access Track Open Space comprise of access, highway improvements and use (Work No. 10A.2), required to access the Hydrogen Distribution Network.
- 9.1.39 The location of these works is shown on the Works Plans (Document Reference 2.4).
- 9.1.40 The Applicant is not seeking to compulsorily acquire any part of the Cowpen Bewley Access Track Open Space (i.e. to acquire the freehold interest), but has included powers to compulsorily acquire new rights over the Cowpen Bewley Access Track Open Space, for the purposes of constructing, maintaining and operating the works set out above.

- 9.1.41 The Cowpen Bewley Access Track Open Space is vested in the parties noted in Table 9.3 above, and is used by the public for the purposes set out above. The Applicant is not aware of any other persons entitled to rights of common or other rights.
- 9.1.42 The Cowpen Bewley Access Track Open Space will be used by the Applicant for the purposes of access to the Hydrogen Distribution Network to be constructed within Cowpen Bewley Woodland Park, with a limited period of interruption to public access during construction. Following construction, the Cowpen Bewley Access Track Open Space will be available for use by the public as it is at present.
- 9.1.43 Maintenance of Work Nos. 6A.2 and 6B.2 will principally be by way of occasional vehicular access. No restrictions on access to the Cowpen Bewley Access Track Open Space are expected during use of the Cowpen Bewley Access Track Open Space for access to the apparatus. Maintenance access will be short in duration and infrequent.
- 9.1.44 No permanent surface installation works will be required within the Cowpen Bewley Access Track Open Space. The Applicant is seeking powers in the Order for the temporary possession of land as well as the acquisition of new rights, rather than outright freehold compulsory acquisition of the land, for installation of new infrastructure and related maintenance activities.
- 9.1.45 There is no operational need for the Applicant to acquire the freehold of any part of the Cowpen Bewley Access Track Open Space, as the use of the temporary possession and new rights powers is more proportionate in the circumstances, allowing the use of the relevant land to remain with / revert back to the relevant landowner. Rights permitting the Applicant's infrequent use of the Cowpen Bewley Access Track Open Space, including easements to access apparatus for maintenance, may be compulsorily acquired and these rights are included in the Order.
- 9.1.46 In summary:
- the physical appearance of the Cowpen Bewley Access Track Open Space will be unaffected;
 - the use of the Cowpen Bewley Access Track Open Space for recreation will carry on uninterrupted except for temporary restrictions over limited areas of the open space land during construction; and
 - public access to the Cowpen Bewley Access Track Open Space will not be permanently affected.
- 9.1.47 The Applicant therefore considers that the test under section 132(3) of the PA 2008 is satisfied. The Cowpen Bewley Access Track Open Space, when burdened with the access rights described above, will not be any less advantageous to persons in whom it is vested, other persons, if any, if entitled to rights of common or other rights, and to the public.

Coatham Marsh Open Space Land

- 9.1.48 Parts of the Order Land which are open space and for which no replacement land is to be provided are close to (but not within) the Coatham Marsh Local Nature Reserve (“Coatham Marsh LNR”). This part of the Order Land is referred to as the “Coatham Marsh Open Space Land”.
- 9.1.49 Coatham Marsh LNR is used by the public for recreation, and it appears to the Applicant that the Coatham Marsh Open Space Land may also be used for public recreation including walking and dog walking.
- 9.1.50 Details of the plots that comprise the Coatham Marsh Open Space Land, and related ownership, are set out in Table 9.4: Interests in the Coatham Marsh Open Space Land.

Table 9.4: Interests in the Coatham Marsh Open Space Land

PLOT	FREEHOLD OR REPUTED FREEHOLD OWNER	LESSEES OR TENANTS OR REPUTED LESSEES OR TENANTS	OCCUPIER OR REPUTED OCCUPIER	CATEGORY 2
14/43	Unregistered / unknown (in respect of pending title application) South Tees Developments Limited		South Tees Developments Limited	DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Teesworks Limited (as beneficiary on title CE246350)
14/44	Unregistered / unknown (in respect of pending title application CE253422) South Tees Developments	One-Dyas UK Limited (in respect of pipeline) Ineos UK SNS Limited (in respect of pipeline)	South Tees Developments Limited One-Dyas UK Limited (in respect of pipeline)	DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Teesworks Limited (in respect of a

	Limited		Ineos UK SNS Limited (in respect of pipeline)	restriction against the disposition of the registered estate on title CE246350 Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)
14/45	Unregistered / unknown (in respect of pending title application CE253422) South Tees Developments Limited		South Tees Developments Limited Openreach Limited	DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Teesworks Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)
14/46	Unregistered /	One-Dyas UK	South Tees	DCS Industrial

	<p>unknown (in respect of pending title application CE253422)</p> <p>South Tees Developments Limited</p>	<p>Limited (in respect of pipeline)</p> <p>Ineos UK SNS Limited (in respect of pipeline)</p>	<p>Developments Limited</p> <p>One-Dyas UK Limited (in respect of pipeline)</p> <p>Ineos UK SNS Limited (in respect of pipeline)</p>	<p>Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Teesworks Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p>
14/47	<p>Unregistered / unknown (in respect of pending title application CE253422)</p> <p>South Tees Developments Limited</p>		<p>South Tees Developments Limited</p>	<p>DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Teesworks Limited (in respect of a restriction against the disposition of</p>

				<p>the registered estate on title CE246350</p> <p>Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p>
14/48	<p>Unregistered / unknown (in respect of pending title application CE253422)</p> <p>South Tees Developments Limited</p>		<p>South Tees Developments Limited</p>	<p>DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Teesworks Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p>

15/235	<p>Unregistered / unknown (in respect of pending title application CE253422)</p> <p>South Tees Developments Limited</p>		<p>South Tees Developments Limited</p>	<p>DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Teesworks Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p>
15/236	<p>Unregistered / unknown (in respect of pending title application CE253422)</p> <p>South Tees Developments Limited</p>	<p>Ineos UK SNS Limited (in respect of pipeline)</p> <p>One-Dyas UK Limited (in respect of pipeline)</p>	<p>South Tees Developments Limited</p> <p>Ineos UK SNS Limited (in respect of pipeline)</p> <p>One-Dyas UK Limited (in respect of pipeline)</p>	<p>DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Teesworks Limited (in respect of a restriction against the</p>

				<p>disposition of the registered estate on title CE246350</p> <p>Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p>
15/237	<p>Unregistered / unknown (in respect of pending title application CE253422)</p> <p>South Tees Developments Limited</p>		<p>South Tees Developments Limited</p> <p>Openreach Limited</p>	<p>DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Teesworks Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)</p> <p>Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title</p>

				CE246350)
15/243	Unregistered / unknown (in respect of pending title application CE253422) South Tees Developments Limited		South Tees Developments Limited Openreach Limited	DCS Industrial Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Teesworks Limited (in respect of a restriction against the disposition of the registered estate on title CE246350) Anglo American Woodsmith (Teesside) Limited (in respect of a restriction against the disposition of the registered estate on title CE246350)

- 9.1.51 The works forming part of the Proposed Development that will be located on the Coatham Marsh Open Space Land comprise of water supply connection works to provide water to Work Nos. 1B.1 and 1B.2, comprising up to two water pipelines of up to 1100 millimetres nominal bore diameter from the existing raw water main (Work No. 4).
- 9.1.52 The location of these works is shown on the Works Plans (Document Reference 2.4).
- 9.1.53 The Applicant is not seeking to compulsorily acquire any part of the Coatham Marsh Open Space Land (i.e. to acquire the freehold interest), but has included powers to compulsorily acquire new rights over the Coatham Marsh Open Space

Land, for the purposes of constructing, maintaining and operating the works set out above.

- 9.1.54 The Coatham Marsh Open Space Land is vested in the parties noted in Table 9.4 above, and is used by the public for the purposes set out above. The Applicant is not aware of any other persons entitled to rights of common or other rights.
- 9.1.55 The proposed methodology for carrying out the works within the Coatham Marsh Open Space Land is as follows.
- 9.1.56 The Work No. 4 pipeline will be constructed using open-cut and above ground techniques. The width of the pipeline construction corridor will vary between 10 and 25 m, depending on factors such as location, constraints and pipeline diameter. The method of installation for the sections of buried pipeline is expected to involve:
- segregating a working area using suitable fencing and safety signage;
 - removal of topsoil if present and stockpile for reuse;
 - laying out sections of pipe adjacent to pipeline route, and welding pipeline joints together;
 - excavating a trench to the required depth with battered sides or suitable trench supports;
 - installation of pipe bedding material at the base of the trench, and lifting sections of pipeline into the trench;
 - installation of packing material around the pipe and backfill of the trench with excavated material; and
 - replacement of topsoil and reinstatement to agreed standards.
- 9.1.57 Construction of Work No. 4 will require temporary restrictions on access to the Coatham Marsh Open Space Land. However, the restrictions would be over a limited area of the overall area of open space land. The duration of restrictions is likely to be for around 3 months.
- 9.1.58 Maintenance of Work No. 4 will principally be by way of occasional walkover, consisting of mainly non-intrusive inspections. However, no restrictions on access to the Coatham Marsh Open Space Land are expected during these inspections. Intrusive maintenance will only occur if faults occur in the infrastructure, or maintenance necessitates replacement of infrastructure. Maintenance will be short in duration and infrequent and will not require the fencing of large linear areas.
- 9.1.59 No permanent surface installation works will be required within the Coatham Marsh Open Space Land. The Applicant is seeking powers in the Order for the temporary possession of land as well as the acquisition of new rights, rather than outright freehold compulsory acquisition of the land, for installation of new infrastructure and related maintenance activities.
- 9.1.60 There is no operational need for the Applicant to acquire the freehold of any part of the Coatham Marsh Open Space Land, as the use of the temporary possession and new rights powers is more proportionate in the circumstances, allowing the

use of the relevant land to remain with / revert back to the relevant landowner. Rights permitting the Applicant's infrequent use of the Coatham Marsh Open Space Land, including easements to retain the apparatus underground and to access it for maintenance, may be compulsorily acquired and these rights are included in the Order.

9.1.61 In summary:

- the physical appearance of the Coatham Marsh Open Space Land will be unaffected;
- the use of the Coatham Marsh Open Space Land for recreation will carry on uninterrupted except for temporary restrictions over limited areas of the open space land during construction; and
- public access to the Coatham Marsh Open Space Land will not be permanently affected.

9.1.62 The Applicant therefore considers that the test under section 132(3) of the PA 2008 is satisfied. The Coatham Marsh Open Space Land, when burdened with the rights to install, inspect and maintain the elements of the Proposed Development described above, will not be any less advantageous to persons in whom it is vested, other persons, if any, if entitled to rights of common or other rights, and to the public.

9.1.63 The Applicant has included in the preamble to the Order (Document Ref. 4.1) a statement as regards to compliance with section 132(3), as required.

Land or apparatus owned or operated by statutory undertakers or other third parties

9.1.64 The Applicant has identified that the following operate apparatus within the Order Limits, or are statutory undertakers who own land or apparatus:

- Air Products (BR) Limited;
- Air Products Renewable Energy Limited;
- Anglian Water Services Limited;
- BP Chemicals Limited;
- BP International Limited;
- Egdon Resources U.K. Limited;
- GDF Suez Teesside Limited;
- National Gas Transmission PLC;
- National Grid Electricity Transmission PLC;
- Network Rail Infrastructure Limited;
- Northern Electric PLC;
- Northern Gas Networks Limited;

- Northern Gas Processing Limited;
- Northern Powergrid (Northeast) PLC;
- Northern Powergrid Limited;
- Northumbrian Water Limited;
- OCU Group Limited;
- On Tower UK 5 Limited;
- Openreach Limited;
- Virgin Media Limited; and
- Vodafone Limited.

9.1.65 The Order (Document Reference 4.1) includes both protective provisions in respect of relevant types of statutory undertakers and bespoke protective provisions for some statutory undertakers (see Article 34 and Schedule 12), and the Applicant is seeking to agree the form of protective provisions with the relevant parties.

9.1.66 Article 34 of the Order gives the undertaker certain powers in relation to compulsory acquisition and acquisition of rights in statutory undertakers within the Order Land. That article is subject to the protective provisions included at Schedule 12 of the Order, which provide adequate protection for statutory undertakers' assets. Accordingly, the Applicant considers that the statutory undertakers will not suffer serious detriment to the carrying on of their undertaking. The tests set out in sections 127(3) and 127(6) of the PA 2008 are therefore satisfied.

9.1.67 Various statutory undertakers and owners of apparatus have a right to keep equipment (in connection with their undertaking) on, in or over the Order Land. Statutory undertakers and other apparatus owners that are known to have equipment on, in or over the Order Land are included in the Book of Reference.

9.1.68 Section 138 of the PA 2008 applies if a development consent order authorises the acquisition of land (compulsorily or by agreement) and there subsists over the land a 'relevant right', or there is 'relevant apparatus' on, under or over the land.

Section 138(4)

"The order may include provision for the extinguishment of the relevant right, or the removal of the relevant apparatus, only if the Secretary of State is satisfied that the extinguishment or removal is necessary for the purpose of carrying out the development to which the order relates."

9.1.69 The Order includes provision to authorise the extinguishment of a relevant right, or the removal of relevant apparatus belonging to statutory undertakers, in connection with the delivery of the Proposed Development.

9.1.70 The exercise of such powers will be carried out in accordance with the protective provisions contained in Schedule 12 to the Order. The protective provisions will where relevant set out constraints on the exercise of the powers in the Order, with a view to safeguarding the statutory undertakers' and electronic communications

apparatus owners' interests, whilst enabling the Proposed Development to proceed. The Applicant therefore considers that the test set out in section 138 of the PA 2008 is satisfied.

9.1.71 Whilst the Main Site is located on part of the Teesworks Site (part of the former Redcar Steel Works Site) and which is land controlled by a single owner (the South Tees Development Corporation and related companies), the other works (connections, cables and pipelines) extend across areas of land with a variety of landowners and occupiers (who are not statutory undertakers) with rights of access, business operations or who own or operate apparatus such as pipelines. The Applicant is therefore seeking to agree protective provisions with these parties to ensure they have the ability to continue their operations, access their property and have the ability to exercise approval in relation to aspects of the Proposed Development that have the potential to affect or interact with their interests or assets.

9.1.72 These parties and relevant statutory undertakers are listed below:

- Air Products Renewable Energy Limited;
- Anglian Water Services Limited;
- Anglo American (Woodsmith) Teesside Limited;
- BOC Limited;
- CF Fertilisers UK Limited;
- Exolum Seal Sands Limited;
- Huntsman Pipelines;
- Ineos Nitriles (UK) Limited;
- INEOS UK SNS Limited and One-Dyas UK Limited;
- Inovyn Chlorvinyls Limited; Intertek Group PLC;
- Kellas/Cats North Sea Limited;
- Natara Global (previously Flavour Speciality Ingredients Limited);
- National Grid Electricity Transmission PLC;
- National Grid Gas and National Grid Gas Transmission;
- Navigator Terminals North Tees Limited;
- Navigator Terminals Seal Sands Limited;
- Norsesea Pipeline Limited, Norpipe Oil AS, Norpipe Petroleum UK Limited and CononoPhillips (UK) Teesside Operator Limited;
- North Tees Limited;
- North Tees Land Limited;
- North Tees Rail Limited;

- Northern Electric;
- Northern Gas Networks Limited;
- Northern Powergrid (Northeast) PLC
- Northumbrian Water;
- NPL Waste Management;
- Marlow Foods;
- On Tower UK 5 Limited;
- Openreach Limited;
- PD Teesport Limited;
- Redcar Bulk Terminal Limited;
- Sabic UK Petrochemicals Limited;
- Seal Sands Gas Transportation Limited;
- Sembcorp Utilities (UK) Limited;
- Statera;
- Storelectric Limited;
- Suez Recycling and Recovery UK Limited;
- Teesside Gas and Liquid Processing Limited;
- Teesside Windfarm Limited;
- Virgin Media Limited; and
- Vodafone Limited.

9.1.73 Given the heavily industrialised nature of the Site, there is the potential for interactions with other privately owned or operated apparatus (that is, apparatus not owned or operated by statutory undertakers). The Order (Part 3, Schedule 12, Document Reference 4.1) includes provisions for the protection of operators of apparatus and which will apply to relevant ‘third parties’, as defined in that Part (unless another Part of Schedule 12 applies).

Inter-relationship with Net Zero Teesside and HyGreen Projects

9.1.74 The Applicant is promoting the H2Teesside Project and which will tie in (via Work No. 7) to the CO₂ onshore gathering network being separately developed by NEP (and consent for which was granted as part of the NZT Project). NEP will be responsible for compressing, transporting and permanently storing the CO₂ captured from the Proposed Development. NEP’s compression facilities are adjacent to the H2Teesside Main Site. The Applicant also has other associated development connections which extend into the NZT Project main site, including electrical, gas and water connections. The Applicant’s approach of including

connection corridors within the NZT Project main site has been discussed and agreed in principle with the NZT Project.

- 9.1.75 Broad corridors/areas for these need to be included at this stage as the NZT main site (NZT Work Nos. 1 and 7) detailed design is not sufficiently progressed to be able to specify precise corridors in which the connections will run nor precise tie-in points. The Applicant will only carry out parts of the Proposed Development within the NZT main site to the extent necessary, within corridors / areas to be defined during detailed design and in close liaison with the NZT Project.
- 9.1.76 There are also other interactions between the Proposed Development and the NZT Project, including in relation to the connection corridors which extend from the Main Site through the Teesworks site; for allowing for abnormal indivisible load deliveries via Redcar Bulk Terminal; access routes; and within existing and proposed pipeline corridors south and north of the Tees. These have also been discussed with the NZT Project. Proposals to consider whether construction compounds could be shared are also being explored with the NZT Project.
- 9.1.77 Separately bp is also promoting the HyGreen Project, which is anticipated to be consented via a planning permission pursuant to the Town and Country Planning Act 1990. The HyGreen main site overlaps with the H2Teesside Main Site, and as above for the NZT Project, this has been discussed with the HyGreen Project. This is to allow the H2Teesside Project to utilise this area, should the HyGreen Project not progress. There are also overlaps between the respective connection corridors for the H2Teesside Project and the HyGreen Project in the Wilton area.
- 9.1.78 The Applicant is engaging with the NZT and HyGreen Projects in order to ensure that the projects take appropriate account of each other as they come forward, and to discuss the terms on which interactions will be managed. This may require protective provisions and/or a side agreement, which the parties are discussing.
- 9.1.79 Separately, the Applicant's Environmental Statement (Document Ref. 6.1 to 6.4) has considered the potential cumulative impacts arising from the Proposed Development, the NZT Project and the HyGreen Project. The Applicant has also reflected the NZT Project and HyGreen Project in the Order (Document Reference 4.1) Requirements where appropriate, such as in the construction traffic management plan and local liaison group Requirements (18 and 25 respectively), and will be working with them to help manage combined construction impacts, as set out in the Framework Construction Environmental Management Plan, Framework Construction Traffic Management Plan and Framework Construction Workers Travel Plan (Document References 5.12, 5.16 and 5.15).

10.0 OTHER CONSENTS AND LICENCES

Consents Required by the Applicant

10.1.1 The Applicant requires various other consents, as well as a DCO, in order to build and operate the Proposed Development. The Other Consents and Licences Statement (Document Ref. 5.7) sets out the additional consents required and when they will be applied for. The key consents are identified below and reference should be made to Other Consents and Licences Statement for the full list and the position as regards the need for and obtaining each consent:

- Environmental permits in respect of the operation of the Hydrogen Production Facility and potentially in relation to activities affecting flood risk and discharge of surface water;
- Hazardous substance consent;
- COMAH licence;
- Greenhouse gas permit;
- Gas transporter licence;
- Planning and advanced reservation of capacity agreement;
- Application to offer for physical connection to gas transmission network;
- Connection agreement for connection to the electricity distribution network;
- European protected species licence; and
- Class licence under the Wildlife and Countryside Act 1981.

10.1.2 The Applicant is not aware of any reason why these and other consents required would not be granted and therefore does not consider that they represent an impediment to the Proposed Development proceeding.

Consents Required for Carbon Dioxide Transport and Storage

10.1.3 Carbon dioxide captured by the Proposed Development will be transported by pipeline (Work No. 7) to the separate Northern Endurance Partnership infrastructure on the adjacent Net Zero Teesside site, for high-pressure compression and onward transport via offshore pipeline and underground storage.

10.1.4 The main consents required for the separate carbon dioxide transport and storage project are being progressed separately, by the Northern Endurance Partnership. Those consents include a development consent order (for the onshore carbon dioxide compression facilities and onshore pipeline), an environmental permit, pipeline works authorisation (for the offshore pipeline), and a carbon dioxide storage permit.

10.1.5 The Applicant understands that those consents have been granted already (the DCO – the Net Zero Teesside Order 2024), or have been applied for (the

environmental permit and carbon dioxide storage permit), or will be applied for in a timescale to allow construction and operation of the transport and storage project.

11.0 HUMAN RIGHTS

Human Rights

11.1.1 The Human Rights Act 1998 incorporated into UK law the European Convention on Human Rights ('the Convention'). The Convention includes provisions in the form of Articles, the aim of which is to protect the rights of the individual.

11.1.2 The following Articles of the Convention are relevant to the Secretary of State's decision as to whether the Order should be made so as to include powers of compulsory acquisition.

Article 1 of the First Protocol to the Convention

11.1.3 This provides the right of everyone to the peaceful enjoyment of possessions and provides that no one can be deprived of their possessions except in the public interest and subject to the relevant national and international laws and principles.

Article 6

11.1.4 This entitles those affected by the powers sought in the Order to a fair and public hearing of any relevant objections they may have to the granting of those powers. This includes property rights and can include opportunities to be heard in the decision making process.

Article 8

11.1.5 This protects private and family life, home and correspondence. No public authority can interfere with these rights except in accordance with the law, and so far as is necessary in the interest of national security, public safety or the economic well-being of the country.

Overview

11.1.6 The Secretary of State, as the decision maker, is under a duty to consider whether the exercise of powers interacts with the rights protected by the Convention.

11.1.7 The Order has the potential to infringe the human rights of persons who own property or hold interests in the land within the Order Limits under Article 1 of the First Protocol. Such an infringement is authorised by law so long as:

- the statutory procedures for making the Order are followed and there is a compelling case in the public interest for the inclusion of powers of compulsory acquisition in the Order; and
- the interference with the convention right is proportionate.

11.1.8 In preparing the Application, the Applicant has considered the potential infringement of the Convention rights in consequence of the inclusion of compulsory acquisition powers within the Order. The Applicant considers that there would be very significant public benefits arising from the making of the Order for the Proposed Development (as set out in previous sections of this Statement and in the Project Need Statement (Document Ref. 5.3) and Planning Statement (Document Ref. 5.2)). Those benefits can only be realised if the Order includes

compulsory acquisition powers, and the purpose for which the land is sought (to build and operate the Proposed Development) is legitimate. The Applicant considers, on balance, that the significant public benefits outweigh the effects on persons who own interests in relevant land or who may be affected by the Proposed Development.

- 11.1.9 The Applicant considers that there is a compelling case in the public interest for the exercise of such powers of compulsory acquisition.
- 11.1.10 For those affected by expropriation or dispossession, compensation is payable in accordance with the statutory compensation code. The Funding Statement (Document Ref. 3.3) confirms the availability of funds to meet these liabilities.
- 11.1.11 In relation to Article 6, there has been opportunity to make representations regarding the preparation of the Application. In accordance with Part 5 of the PA 2008, the Applicant has consulted with persons set out in the categories contained in Section 44 of the PA 2008, which includes owners of land affected and those who may be able to make claims either under Sections 7 and 10 of the Compulsory Purchase Act 1965 in respect of injurious affection or under Part 1 of the Land Compensation Act 1973. The beneficiaries of rights overridden by the exercise of powers in the Order can make claims under Section 10 of the Compulsory Purchase Act 1965.
- 11.1.12 Following acceptance of the Application, 'relevant representations' can be made in response to the notice which the Applicant is obliged to give pursuant to Section 56 of the PA 2008. These are then considered during the examination of the Application by the examining authority, in any written representations procedure which the examining authority decides to hold or at any compulsory purchase hearing held under Section 92 of the PA 2008. There are further opportunities for affected persons to be involved in the examination process, including submitting detailed written representations, responding to matters raised by the examining authority and at other types of hearings that may be held.
- 11.1.13 Should the Order be made, any person aggrieved may challenge the Order in the High Court if they consider that the grounds for doing so are made out, pursuant to Section 118 of the PA 2008.
- 11.1.14 In relation to matters of compensation for land to be acquired, affected persons have the right to apply to the Upper Tribunal (Lands Chamber) to determine the compensation payable.
- 11.1.15 For the above reasons, any infringement of the Convention rights of those whose interests are affected by the inclusion in the Order of powers of compulsory acquisition, is proportionate and legitimate and is in accordance with national and European law. For the reasons set out in Section 7 and 8 of this Statement, the Applicant considers that there is a compelling case in the public interest for the exercise of such powers of compulsory acquisition.
- 11.1.16 The Applicant therefore considers that it would be appropriate and proportionate for the Secretary of State to make the Order, including the compulsory acquisition powers sought.

Conclusion on Human Rights

- 11.1.17 The Applicant considers that there would be very significant public benefit arising from the making of the Order for the Proposed Development. That benefit can only be realised if the Order includes compulsory acquisition powers, and the purpose for which the land is sought (to build and operate the Proposed Development) is legitimate.
- 11.1.18 The Applicant considers that there is a compelling case in the public interest for the exercise of such powers of compulsory acquisition. The Applicant considers that it would, therefore, be appropriate and proportionate for the Secretary of State to make the Order, including the compulsory acquisition powers sought.

12.0 FURTHER INFORMATION

Negotiations

- 12.1.1 Owners and occupiers of property affected by the Order who wish to negotiate a sale or discuss matters of compensation should contact Joshua Peat of Dalcour Maclaren (by telephone 07768023090 / 01623203027 or by email joshua.peat@dalcourmaclaren.com).

Compensation

- 12.1.2 Provision is made by statute for compensation for the compulsory acquisition of land. Helpful information is given in the series of booklets published by the Department for Levelling Up, Housing and Communities entitled "Compulsory Purchase and Compensation". Copies of these booklets are obtainable, free of charge, from: <https://www.gov.uk/government/collections/compulsory-purchase-system-guidance>

- Booklet No. 1 - Compulsory Purchase Procedure;
- Booklet No. 2 - Compensation to Business Owners and Occupiers;
- Booklet No. 3 - Compensation to Agricultural Owners and Occupiers; and
- Booklet No. 4 - Compensation for Residential Owners and Occupiers.

13.0 CONCLUSION

- 13.1.1 The Applicant submits, for the reasons detailed in this Statement, that the inclusion of powers of compulsory acquisition in the Order for the purposes of the Proposed Development meets the conditions in sections 122(2) and 122(3) of the PA 2008, as well as the considerations in the CA Guidance.
- 13.1.2 The acquisition of land and rights and the temporary use of land, together with the overriding of interests, rights and restrictive covenants and the suspension or extinguishment of private rights, is no more than is reasonably required to facilitate or is incidental to the Proposed Development, and includes Replacement Land to replace Lost Open Space. The land identified to be subject to compulsory acquisition is no more than is reasonably necessary and proportionate for these purposes. This is demonstrated in the Order (Document Ref. 4.1), the Works Plans (Document reference 2.4) and in other documents accompanying the Application, including in this Statement of Reasons.
- 13.1.3 There is a compelling case in the public interest for the inclusion of compulsory acquisition powers in the Order. The Proposed Development meets an urgent need for low carbon hydrogen production and is an essential part of decarbonising the power and industrial sectors, helping the UK to meet net zero targets. The Proposed Development is compliant with National Policy Statements EN-1, EN-4 and EN-5 and additionally, with other decision-making factors specified in section 104 of the PA 2008, including Government energy and climate change policy. It also provides social and economic benefits for the local area.
- 13.1.4 All reasonable alternatives to compulsory acquisition have been explored. Given the national and local need for the Proposed Development and the support for it found in policy, as well as the suitability of the Order Land, compulsory acquisition of the land and rights and the temporary use of land, together with the overriding of interests, rights and restrictive covenants and the suspension or extinguishment of private rights is justified in the circumstances of the Proposed Development.
- 13.1.5 The Applicant has sought to acquire the required land interests and the rights to occupy land temporarily by voluntary agreement and will continue to do so going forward. The powers of compulsory acquisition and to occupy land are required to provide certainty that the Proposed Development (which will make an important contribution to decarbonisation of UK-produced natural gas and to achieving national targets) can be constructed, maintained and operated.
- 13.1.6 The proposed interference with the rights of those with an interest in the Order Land is for a legitimate purpose as detailed in this Statement and is necessary and proportionate. The Applicant considers that the substantial public benefits from the proposed compulsory acquisition would outweigh the private loss that would be suffered by those whose land or interests will be acquired, and therefore justifies interference with such land or rights.
- 13.1.7 The requisite funds are available to meet any costs of land acquisition and compensation payable as a result of the use of powers of compulsory acquisition as demonstrated in the Funding Statement (Document reference 3.3).