

Net Zero Teesside Project

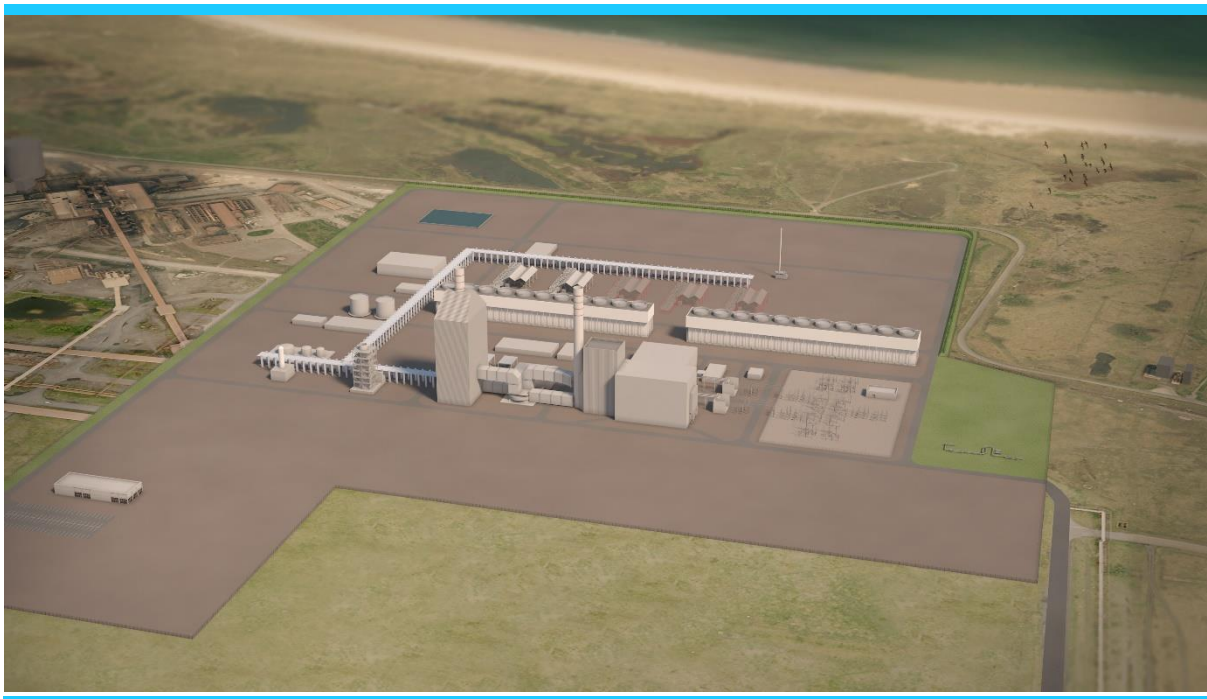
Planning Inspectorate Reference: EN010103

Land at and in the vicinity of the former Redcar Steel Works site, Redcar and in Stockton-on-Tees, Teesside

The Net Zero Teesside Order

Document Reference: 6.6 – Wider Project Environmental Statement – Habitat Regulations Assessment Addendum

Planning Act 2008



Applicants: Net Zero Teesside Power Limited (NZN Power Ltd) & Net Zero North Sea Storage Limited (NZNS Storage Ltd)

Date: August 2023

DOCUMENT HISTORY

Document Ref	6.6		
Revision	1.0		
Author	AECOM / Xodus		
Signed	AECOM	Date	4 th August 2023
Approved By	Ian Campbell		
Signed	(IC)	Date	4 th August 2023
Document Owner	AECOM		

GLOSSARY

Abbreviation	Description
AFPF	The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
CCP	Carbon Capture Plant
CCGT	Combined Cycle Gas Turbine
CCUS	Carbon Capture, Utilisation and Storage
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CEMP	Construction and Environmental Management Plan
CO ₂	Carbon Dioxide
COMAH	Control of Major Accidents Hazards Regulations
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
DIN	Dissolved Inorganic Nitrogen
DML	Deemed Marine Licence
EMS	Environmental Management System
ENVIID	Environmental Impact Identification
ES	Environmental Statement
FLO	Fisheries Liaison Officer
Onshore ES	Environment Statement covering the Proposed Development
Offshore ES	Environment Statement covering the Offshore Elements of the NEP Project, below Mean Low Water Springs.
GEART	Guidelines for the Environmental Assessment of Road Traffic
GHG	Greenhouse Gases
GI	Ground Investigation
HDD	Horizontal Directional Drilling
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HSE	Health and Safety Executive
HRA	Habitats Regulations Assessment
ICCI	In-Combination Climate Impacts
ICZ	Inner Consultation Zone

Abbreviation	Description
IEMA	Institute of Environmental Management and Assessment
IFCA	Inshore Fisheries Conservation Authority
ISH	Issue Specific Hearing
JNCC	Joint Nature Conservation Committee
MAGiC	Multi-Agency Geographic Information for the Countryside
MBT	Micro-bored Tunnel
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
NEIFCA	North Eastern Inshore Fisheries and Conservation Authority
NEP	Northern Endurance Partnership
NPS -EN	National Policy Statement - Energy
NZT	Net Zero Teesside
O&M	Operation and Maintenance
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
PA	Planning Authority
PCC	Power, Capture and Compression Site
PEIR	Preliminary Environmental Information Report
PHE	Public Health England (now Health Security Agency)
PIC	Personal Injury Collision
PINS	Planning Inspectorate
RFI	Request for Information
SAC	Special Areas of Conservation
SoCE	Statement of Combined Effects
SoS	Secretary of State
SPA	Special Protection Area
SSC	Suspended solid concentrations
SSSI	Site of Special Scientific Interest
STDC	South Tees Development Corporation
TCE	The Crown Estate
TEMPRO	Trip End Model Presentation Program

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1.0 INTRODUCTION

1.1 Overview

1.1.1 This Environmental Statement – Habitat Regulations (ES-HRA) Addendum (Document Ref. 6.6) provides a response to paragraph 6 of the Secretary of State’s (SoS) request for information (RFI) dated 16 May 2023 as part of the decision-making phase of the Net Zero Teesside (NZT) Development Consent Order (DCO). In particular:

6. The Secretary of State requests that the Applicants provide an updated Environmental Impact Assessment and Habitats Regulations Assessment Report which include assessment, alone and cumulatively, of the offshore elements of the Wider NZT Project, including the use of the Endurance Store.

1.1.2 Paragraph 7 of the SoS RFI requires:

7. The Secretary of State requests that the Applicants also provide, as part of its updated Environmental Impact Assessment, an assessment of the cumulative effects, and proposed mitigation of such effects where required, of the Proposed Development and the offshore elements of the Wider NZT Project, including potential development of the Endurance Store, on the Hornsea 4 Project.

1.1.3 The Applicants’ initial response to the SoS’ RFI dated 30th May 2023 is included in this document at Appendix 1.

1.1.4 This document sets out the Applicants’ response to Paragraph 6. In relation to Paragraph 7, the Applicants provided an update on the Hornsea 4 project in this submission to the Planning Inspectorate:

<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010103/EN010103-002799-230619%20Orsted%20NZT%20DCO%20Objection%20Withdrawal.pdf>.

1.1.5 This confirms that the Applicants and the developer of Hornsea 4 have reached a commercial agreement that settles the issue over the overlap area. Therefore the Applicants also confirmed it had no remaining objection to the Hornsea 4 DCO application. This is the basis of the scope of the cumulative effect assessment in the Offshore ES and so that document fully assesses the combined effects of the two developments as requested by the SoS. A copy of the Offshore ES is appended to this ES-HRA Addendum at Appendix 2.

1.2 Definitions used in this Document

1.2.1 The key terms used in this document are defined below. Some of these definitions reflect those used in the Onshore Environmental Statement (Onshore ES) for the Proposed Development DCO and subsequent Pre- Examination and Examination material (including a number of ES Addendums that form part of the Onshore ES), and where required referred to within the Offshore ES for the Offshore Elements (see Appendix 2).

- **“NEP Project”** – (new definition, not previously used in the DCO Application). The Northern Endurance Partnership’s (NEP) carbon dioxide (CO₂) transportation and storage system that would enable CO₂ from carbon capture usage and storage (CCUS) projects on Teesside and the Humber to be transported to the Endurance Store, encompassing both part of the Proposed Development (the CO₂ Gathering Network, the high pressure (HP) Compression Station and the commencement of the CO₂ Export Pipeline down to MLWS) and the Offshore Elements (see below). The NEP Project is shown schematically on Figure 1.1;
- **“Proposed Development”** – the part of the Wider NZT Project (see below) that is the subject of the Net Zero Teesside DCO application (the term meaning the same as in the other DCO Application documentation);
- **“Offshore Elements”** – (new definition, not previously used in the DCO Application). The works below MLWS, promoted by the NEP and relating to CO₂ transport and storage comprising:
 - the construction and operation of the NZT CO₂ Export Pipeline¹ “seaward” of MLWS (being the boundary of Work Number 8 as described in Schedule 1 of the final DCO [REP12-003]) to the Endurance Store); and
 - the construction and operation of infrastructure to inject CO₂ from the NZT CO₂ Export Pipeline into a part of the Endurance Store including the drilling of six wells and the installation of manifolds, flowlines, infield pipeline, spools, well heads, and control umbilicals.

Note: the Offshore Elements do not include the CO₂ pipeline connection from Humberside to the Endurance Store that forms part of the NEP Project (as shown in orange on Figure 1.1.). This infrastructure is functionally separate and independent from the infrastructure that is required to construct and operate the Wider NZT Project, is not therefore required in order for the Wider NZT Project to proceed and, by virtue of separate consenting and commercial arrangements for the capture and transportation of CO₂ onshore on Humberside, the Humber CO₂ export pipeline can be constructed and become operational on a different timescale from the Wider NZT Project. There is a degree of interaction between the Wider NZT Project and the Humber CO₂ export pipeline by virtue of the injection infrastructure (described above) being “common” infrastructure that it is anticipated will ultimately be utilised for the injection of CO₂ captured and transported from Humberside as well as Teesside. However, the injection infrastructure can initially be utilised solely for the

¹ The construction of the CO₂ Export Pipeline includes the installation of the associated power and communications umbilical in a separate adjacent trenchless crossing. Where the term CO₂ Export Pipeline is used throughout this document, this includes the associated power and communications umbilical.

injection of CO₂ from Teesside and, if the Humberside pipeline does not come forward, the injection infrastructure can be used solely for the purposes of the Wider NZT Project on an ongoing basis. For the foregoing reasons, the injection infrastructure, but not the Humber CO₂ export pipeline, has been included within the definition of “Offshore Elements” and forms part of the “Wider NZT Project” that is the subject of assessment in this ES-HRA.

- **“Wider NZT Project”** – (new definition, not previously used in the DCO Application). The Proposed Development together with the Offshore Elements. This definition is consistent with and reflects paras. 1.1.4 - 1.1.5 of the Applicants' ES Non-Technical Summary [AS-049], in accordance with paragraph 3 of the SoS's letter². The **Wider** NZT project is shown schematically on Figure 1.1 as the NZT Proposed Development, the Teesside Pipeline and the works at the Endurance Store;
- **“Connection Zone”** – (new definition, not previously used in the DCO Application). Due to the distance between the Endurance Store and majority of the CO₂ Export Pipeline from the Tees Cluster to the Endurance Store, this ES-HRA concentrates on the overlap between the Proposed Development and Offshore Elements. This is the area from the NZT Power Capture and Compression (PCC) site (the location of the commencement of the CO₂ Export Pipeline) to around 5 km offshore – the length of the pipeline within Tees Bay constructed by trenchless techniques or laid in a pre-cut trench and backfilled (see Figure 1.2) where overlap of activities and/or impacts could occur between the Proposed Development and Offshore Elements (see Section 3.0);
- **“Onshore ES”** – the ES submitted as part of the DCO Application for the Proposed Development together with associated Addendums submitted during Examination - Environmental Statement [APP-081 to APP-085, AS-019, APP-087 to APP-348] and Addendum Reports [AS-049 to AS-132], [REP6-106 to REP6-108], and [REP12-116 to REP12-119]);
- **“Offshore ES”** – the ES that will be submitted to OPRED in support of the application for the Offshore Elements. A copy of the Offshore ES is included in this ES-HRA Addendum (see Appendix 2);
- **“Habitat Regulations Assessment (HRA)”** –the Habitat Regulations Assessment for the DCO Application [REP12-032] as updated in this Addendum Document using information from the separate Habitat Regulations Assessment included in Sections 6.9, 7.9, 8.8, 9.8 and 10.3 in the Offshore ES (see Appendix 2 to this ES-HRA Addendum);

- **“The Applicants”** – the Applicants for the Proposed Development, namely Net Zero Teesside Power Limited and Net Zero North Sea Storage Limited; and
- **“The Applicant”** – the Applicant for the Offshore Elements, namely BP Exploration Operating Company Limited.

1.3 The Purpose and Structure of the ES-HRA

1.3.1 The Applicants response to this part of the request was detailed in Appendix 1 of the full response to the request for information (RFI) provided by the Applicants on 30th May 2023 which is included (as Appendix 1) to this ES-HRA. Appendix 1 of the response on 30th May 2023 confirmed that the Applicants intended to submit a document in the form of this ES-HRA in order to address the request at paragraph 6 of the SoS’s RFI dated 16th May 2023. The Secretary of State confirmed by a letter dated 14th June 2023 that he was content with the format of the documentation proposed by the Applicants.

1.3.2 Appendix 1 of the of the response to the RFI dated 30th May 2023 states in paragraphs 11.2.1 to 11.2.3 that the Applicants will respond to the SoS’ request by submitting a document that:

- Reports on any updates to the environmental effects (“alone” and “cumulative”) of the Proposed Development in order to address the passage of time since the submission of the Onshore ES and onshore HRA (or otherwise provides confirmation that there is no change to the effects reported on in those assessments) (see Section 2.0).
- Reports on any new or materially different likely significant environmental effects (to the extent they are identified) of the Wider NZT Project (both “alone” and “cumulatively”) that have not been identified in the Onshore ES and HRA Report, and/or the Offshore ES (including an HRA, and included in this document as Appendix 2) to the extent that the findings in the Offshore ES relate to the Wider NZT Project. That will include, but not be limited to, consideration of the environmental effects at the points of interaction between the Proposed Development and Offshore Elements. In short, this element of the ES-HRA serves to provide information to fulfil the objectives of the Infrastructure Planning (Environmental Impact Assessment) Regulation 2017 (“the EIA Regulations 2017”) by allowing information on likely significant environmental effects of the Wider NZT Project to be available for scrutiny and taken into account in decision making (see Section 3.0).
- Reports on the conclusions on the likely significant effects of the Wider NZT Project as fully assessed and collectively reported upon in the Proposed Development Onshore ES (and Addendums) and HRA Report, and the Offshore ES (to the extent that the findings in the Offshore ES relate to the Wider NZT Project) (see Section 4.0).

1.3.3 This document also provides the SoS with a summary of the consultation approaches that the Proposed Development and the Offshore Elements of the Wider NZT Project to demonstrate to the SoS that both the applications for the

Proposed Development and the NEP Project have been fully consulted upon in accordance with all legal requirements. The consultations have undertaken to inform and share information with the relevant stakeholders and interested parties, allowing for appropriate and adequate consultation to occur in both pre-application submission and in the case of the NZT DCO, the examination stage (see Section 5.0).

- 1.3.4 The Conclusions of this ES-HRA are set out in Section 6.0
- 1.3.5 The ES-HRA should be read with particular consideration of the definitions of the "Proposed Development", "NEP Project", "Offshore Elements" and "Wider NZT Project" provided above. The definitions of the "Offshore Elements" and "Wider NZT Project" are the same as those used in the response to the SoS's RFI on 30th May 2023 and which informed the SoS's acceptance on 14th June 2023 of the format of the documentation to address paragraph 6 of the SoS's RFI request dated 16th May 2023. The definition of the "NEP Project" used in the response to the SoS's RFI on 30th May remains correct but has been further clarified in this document by reference to Figure 1.1.
- 1.3.6 In addition to responding to the requests made by the SoS, as noted above, a commitment has also been made to submit the full Offshore ES to the SoS in parallel with the submission of that document to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) as part of the process of securing consent for the Offshore Elements. The Offshore ES is therefore contained within Appendix 2 of this document.

1.4 Consenting Regime

- 1.4.1 Whilst the Proposed Development and Offshore Elements of the Wider NZT Project form a single project, consent for each element is being sought through differing consenting regimes.
- **Proposed Development:** consent is being sought by means of a DCO, by virtue of the Proposed Development being classified a 'Nationally Significant Infrastructure Project' (a 'NSIP') under Sections 14(1)(a) and 15 and by direction under Sections 35(1) and 35ZA of the Planning Act 2008 (PA 2008). Consent would ultimately be given by the SoS for Department of Energy Security and Net Zero (DESNZ).
 - **Offshore Elements:** The Applicant for the Offshore Elements is seeking a Carbon Storage Permit, supported by an Offshore ES developed under the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 (referred to as "the 2020 Offshore EIA Regulations" in this document) for the offshore elements (below MLWS), with reference made to impacts up to Mean High Water Springs (MHWS). Consent would be granted

by the North Sea Transition Authority (NSTA), following receipt of agreement to grant consent from OPRED acting on behalf of the SoS for DESNZ³.

1.4.2 In terms of EIA, the onshore and offshore consenting regimes are broadly comparable to the relevant regulations in seeking to identify the likely significant environmental effects of the development, and, where necessary and applicable, mitigate or compensate for these effects as far as reasonably practicable. For each consenting regime the following environmental documentation is produced that presents the findings and conclusions of the EIA:

- PA 2008: An ES (the Onshore ES); and
- The 2020 Offshore EIA Regulations: A separate ES (the Offshore ES).

1.4.3 The Applicants have drawn upon the information contained within these two documents and supplementary reports to compile this ES-HRA.

1.5 Description of the Proposed Development

1.5.1 This section of the ES-HRA Addendum describes the Proposed Development. The DCO Application for the Proposed Development is for the onshore (and, in the case of the water discharge outfall, nearshore) elements of the Wider NZT Project. It comprises the infrastructure that is required to capture CO₂ from a new gas-fired power station (that is also to be authorised by the DCO application) in addition to the infrastructure to collect captured CO₂ from a cluster of local industries on Teesside for the onward transportation via a CO₂ transport pipeline to the Endurance Store saline aquifer under the North Sea. The Proposed Development would initially capture and transport up to 4 million tonnes of CO₂ per annum, although the CO₂ transport pipeline has the capacity to accommodate up to 10 million tonnes of CO₂ per annum thereby allowing for future expansion.

1.5.2 The Proposed Development would comprise the following elements as described in Chapter 4 of the Onshore ES [AS-019]:

- a Combined Cycle Gas Turbine (CCGT) electricity generating station with an electrical output of up to 860 megawatts and post-combustion carbon capture (CCP) plant (the '**Low Carbon Electricity Generating Station**');
- a natural gas supply connection and Above Ground Installations ('AGIs') (the '**Gas Connection Corridor**');
- an electricity grid connection (the '**Electrical Connection**');

³ The offshore Endurance Store itself is licensed under The Energy Act 2008 which provides for a licensing regime that governs the offshore storage of carbon dioxide. It forms part of the transposition into UK law of EU Directive 2009/31/EC on the geological storage of carbon dioxide. The Carbon Dioxide (Licensing etc.) Regulations 2010 (SI 2010/2221), which transpose many other requirements of the directive, came into force on 1 October 2010.

- water supply connections (the ‘Water Supply Connection Corridor’);
- waste water disposal connection (the ‘**Water Discharge Connection Corridor**’);
- a CO₂ gathering network (including connections under the tidal River Tees) to collect and transport the captured CO₂ from industrial emitters (the industrial emitters using the gathering network will be responsible for consenting their own CCP and connections to the gathering network) (the ‘**CO₂ Gathering Network Corridor**’);
- a high-pressure CO₂ compression station to receive and compress the captured CO₂ from the Low Carbon Electricity Generating Station and the CO₂ Gathering Network before it is transported offshore (the ‘**HP Compression Station**’);
- The onshore commencement (above MLWS) of a dense phase (HP) CO₂ export pipeline for the onward transport of the captured and compressed CO₂ to the Endurance Store saline aquifer under the North Sea, the onshore and nearshore elements of which are within the Connection Zone (the ‘**CO₂ Export Pipeline**’);
- temporary construction and laydown areas, including contractor compounds, construction staff welfare and vehicle parking for use during the construction phase of the Proposed Development (the ‘**Laydown Areas**’); and
- access and highway improvement works (the ‘**Access and Highway Works**’).

1.5.3 The Low Carbon Electricity Generating Station, its post-combustion CCP and the HP Compression Station would be located on part of the South Tees Development Corporation (STDC) Teesworks area (on part of the former Redcar Steel Works Site). The CO₂ Export Pipeline would also start in this location before heading offshore. The DCO Application seeks consent for the onshore part of the CO₂ Export Pipeline above MLWS.

1.6 Description of the Offshore Elements of the Wider NZT Project

1.6.1 This section of the ES-HRA Addendum describes the Offshore Elements of the Wider NZT Project. The Offshore Elements of the Wider NZT project comprise the offshore section of the CO₂ Export Pipeline (from below MLWS) to the Endurance Store offshore geological CO₂ storage site under the North Sea and the offshore CO₂ injection wells and associated infrastructure.

1.6.2 The Applicant for the Offshore Elements seeks a Carbon Storage Permit, supported by an Offshore ES developed under the Offshore EIA Regulations 2020 for the Offshore Elements (below MLWS), but with reference made to impacts up to MHWS. The Offshore ES will be submitted by BP Exploration Operating Company Ltd. to OPRED. In advance of submission of the Offshore ES to OPRED, a copy of the Offshore ES is submitted to the SoS as Appendix 2 to this ES-HRA.

1.6.3 After the expiration of the public notice period following submission, and on receipt of comments from the consultees who were served a copy of the ES, OPRED undertakes a technical review. Should additional information be required from the Applicant, OPRED will request this, taking this additional information into account in

determining the submission. Any further information that is considered directly relevant to reaching a conclusion on whether the project is likely to have a significant effect on the environment must be made publicly available and the Applicant must publish a notice, akin to the previous public notice for the original EIA documentation. Following resolution of all relevant issues, OPRED reach a conclusion on the significant effects of the project on the environment, including any sites under the UK's national site network.

1.6.4 Once OPRED has reached a conclusion and decision on the ES, the Applicant and the NSTA will be advised that OPRED is ready to agree or refuse to agree to the grant of consent. When the NSTA is ready to make its decision on granting of consent, OPRED inform the NSTA of the conclusions of the Offshore ES review/determination process and advise any environmental conditions to be attached to the agreement to the grant of consent. This advice is provided on the basis of the information submitted by the Applicant and will be reviewed should the project proposal be modified.

1.6.5 The Offshore Elements include:

- installation, connection to subsea infrastructure and commissioning of a CO₂ Export Pipeline from Teesside below mean low water springs (MLWS) to the Endurance Store.
- installation of subsea infrastructure including two manifolds, infield flowlines and an infield pipeline;
- drilling of five CO₂ injection wells into the Endurance Store and one store monitoring well and installation of six subsea trees;
- operation and maintenance of subsea infrastructure and pipelines;
- monitoring and management of the storage aquifer during and after CO₂ injection; and
- installation, commissioning and operation and maintenance of cables (including electric power, fibre-optic communications control cable and hydraulics umbilical).

1.7 Technical authors and drafting process of the document

1.7.1 This document has been compiled collaboratively by bp's technical delivery partners for the Proposed Development and Offshore Elements of the Wider NZT Project, namely AECOM and Xodus respectively. AECOM is the technical author of the Onshore ES, whilst Xodus is the technical author of the Offshore ES.

1.7.2 The EIA Regulations 2017 make it clear that EIA must be undertaken by 'competent experts'. This is reflected in the Institute for Environmental Management and Assessment's (IEMA) seven EIA Commitments for attaining their EIA Quality Mark. Both AECOM and Xodus are registrants of the IEMA Quality Mark. A Table of Competence for the authors of this ES-HRA detailing their role, qualifications, years of experience and professional memberships is included as Appendix 3 for both AECOM and Xodus.

1.7.3 Table 1.1 below identifies which of the two organisations as detailed above have overseen the drafting of the following sections of this ES-HRA. Where required and necessary, these sections have been peer reviewed by the applicable competent expert from each organisation. The symbol ✓ denotes author/co-author, and the symbol ★ denotes peer review of the section’s content, to ensure consistency and accuracy across documentation.

Table 1.1: Section Authors

Section	Technical Author and Competent Expert	
	AECOM	Xodus
Section 1.0	✓	★
Section 2.0	✓	N/A
Section 3.0	✓	★
Section 4.0	✓	★
Section 5.0	✓	✓
Section 6.0	✓	✓

Figure 1.1 NEP Project (Note: the Wider NZT Project is as below but excludes the Humber CO₂ Export Pipeline)

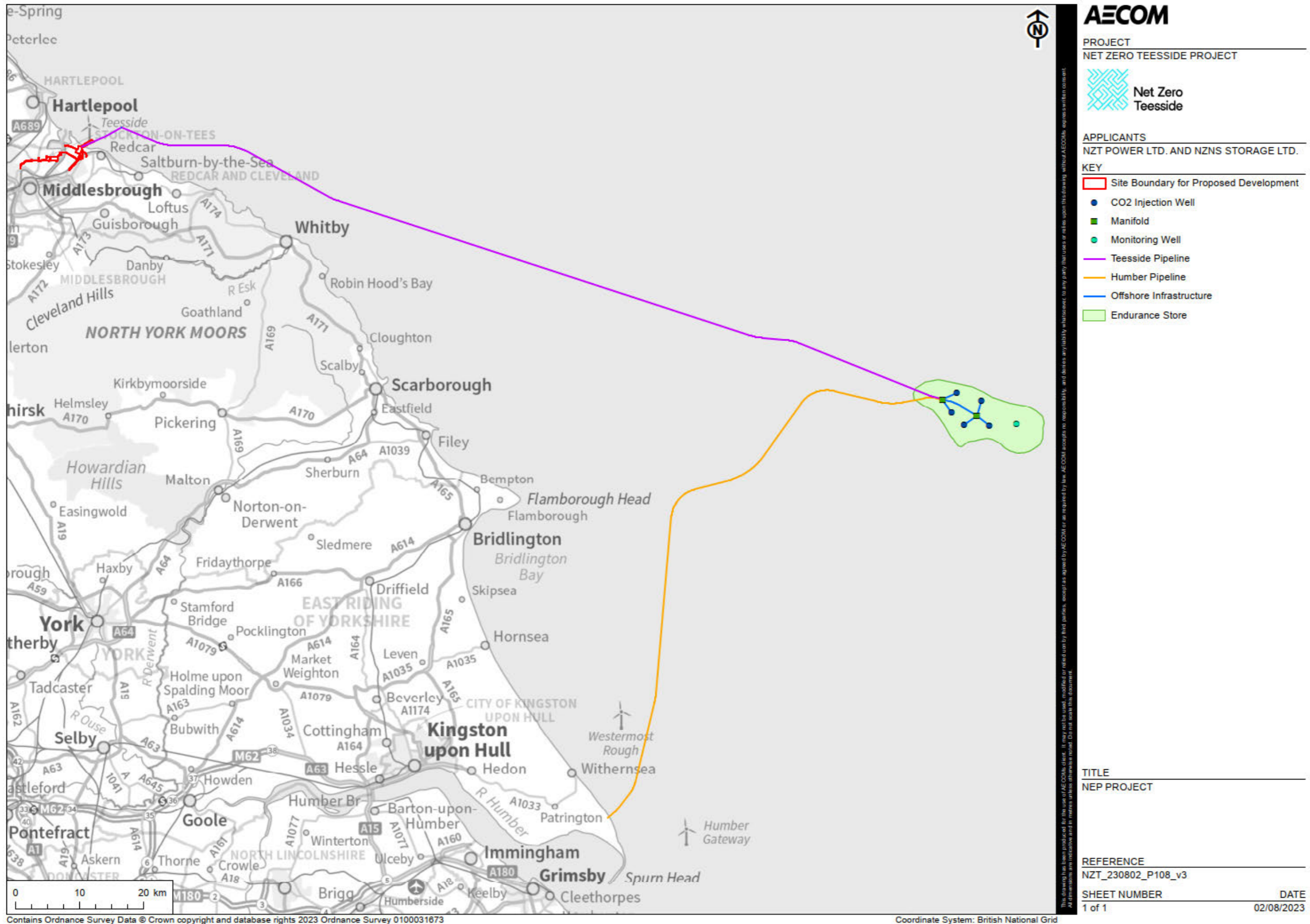
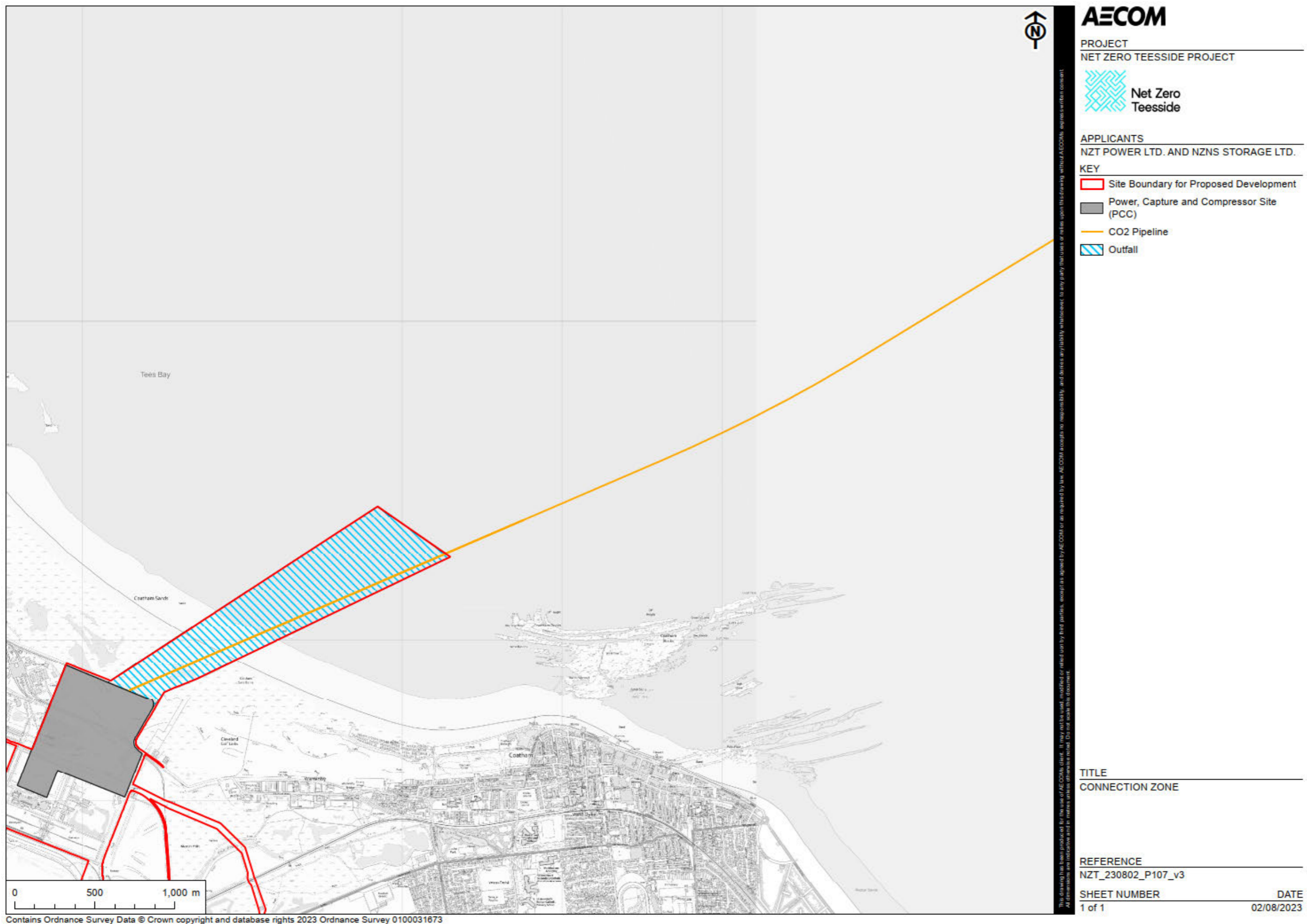


Figure 1.2 Connection Zone (including Outfall construction corridor and CO₂ Pipeline routeing)



2.0 UPDATES TO THE ONSHORE ES AND HRA

2.1 Passing of Time Since Submission of the Onshore ES and HRA

2.1.1 This Section of the ES-HRA provides the information defined in paragraph 11.2.2 of Appendix 1 of the response to the SoS's RFI dated 30th May 2023. It reports on any updates to the assessment of likely significant environmental effects ("alone" and "cumulative") of the Proposed Development in order to address the passage of time since the submission of the Onshore ES (and Addendums) and the HRA Report (or otherwise provides confirmation that there is no change to the effects reported on in those assessments) up to the end of Examination.

2.1.2 It provides:

- a topic-by-topic review of whether the predicted likely significant environmental effects in the Onshore ES (and ES Addendums submitted during Examination) and HRA Report (including updates submitted during Examination) are likely to need to be updated due to the passage of time and provides an update where needed; and
- an assessment of whether the predicted cumulative and combined environmental effects in the Onshore ES and HRA that form part of the DCO Application are likely to need to be updated due to the passage of time and provides an update where needed.

2.1.3 The methodology for undertaking this assessment of changes comprises the following:

- Consideration of changes in the existing environment since DCO submission (July 2021) and subsequent updates, namely:
 1. Change Request and ES Addendum submitted pre-examination (April 2022);
 2. Change Request and ES Addendum submitted at Deadline 6 (23 August 2022); and
 3. Change Request and ES Addendum submitted at Deadline 12 (7 November 2022);
- Any changes in potential impacts from those originally identified in the submitted Onshore ES/ HRA Report and the cause of this change;
- Any potential changes to mitigation measures from those proposed in the Onshore ES/ HRA and Addendums and a brief description; and
- Any changes to likely significant residual effects as a result of changes in the baseline due to the passage of time.

2.1.4 Table A4.1 in Appendix 4 provides an assessment of any potential changes to the environmental impacts related to the passage of time in relation to those topics assessed in Onshore ES on a topic by topic basis. This assessment concludes that there are no changes to the potential impacts, mitigation measures and likely significant residual environmental effects arising from the passing of time since the final submission of environmental information at Deadline 12 of the Examination.

2.1.5 As the Offshore ES is current and up to date, a passage of time assessment is not required.

2.1.6 As an addendum to the assessment in Appendix 6, the UK Government’s Carbon Budget Delivery Plan (CBDP) (HC 1269) was issued on 30 March 2023. The CBDP sets out UK Government’s detailed proposals and policies to enable the delivery of Carbon Budgets 4, 5 and 6 (i.e. for the period to the end of 2037) in accordance with the UK’s Net Zero carbon commitment under the Climate Change Act 2008 (<https://www.legislation.gov.uk/ukpga/2008/27/contents>). Budgets for later Carbon Budget periods have not yet been proposed or ratified. A contextualization of emissions from the Proposed Development’s greenhouse gas emissions as set out in Chapter 11 Climate Change [APP-103] against the CBDP Table 2 projections is presented in Appendix 5.

2.2 Updated Cumulative and Combined Effects

2.2.1 Chapter 24: Cumulative and Combined Effects of the Onshore ES [APP-106] provides an assessment of the potential for cumulative and combined effects to occur as a result of the Proposed Development with other planned projects.

2.2.2 Combined effects (i.e. “in-combination effects”) within the Proposed Development have been assessed in Chapter 24: Cumulative and Combined Effects of the Onshore ES [APP-106]. Combined effects within the Wider NZT Project between the Proposed Development and the Offshore Elements are assessed in Section 3.0 of this document.

2.2.3 The assessment of cumulative effects considers the effects on environmental resources and receptors that are likely to occur from the impacts arising from the Proposed Development in conjunction with those associated with other planned or reasonably foreseeable developments.

2.2.4 The methodology used in this update Cumulative Effects assessment remains the same as set out in Chapter 24 of the Onshore ES [APP-106], namely:

- Stage 1: Establishing the long list of ‘other existing development and/or approved development’;
- Stage 2: Establishing a shortlist of ‘other existing development and/or approved development’;
- Stage 3: Information Gathering; and
- Stage 4: Assessment.

2.2.5 The Applicants’ long list at DCO submission was contained in Appendix 24B [APP-345] and updated long lists were submitted into Examination (Document Ref. 9.34) at Deadline 7 [REP-011], Deadline 8 [REP8-047], Deadline 9 [REP9-014] and Deadline 11 [REP11-012]. The Deadline 11 long-list [REP11-012] was used as the basis for the reassessment in the ES-HRA. This was supplemented by a review of the draft long-list to be included in the Preliminary Environmental Information Report for the H2Teesside project (information provided by the applicant). As H2Teesside long-list is up to date, and the current Application Boundary for the proposed H2Teesside

development covers a larger on-shore area than the NZT boundary, the use of the draft long-list from this project is considered both robust and proportionate.

Screening of Nationally Significant Infrastructure Projects

- 2.2.6 Nationally Significant Infrastructure Projects in the Teesside area on the long list were confirmed by a review of the PINS website. This identified the following NSIPs within the zone of influence of the Proposed Development:
- Tees Combined Cycle Power Plant (CCPP) for which a DCO was granted in 2019;
 - York Potash Harbour Facilities Order for which a DCO was granted in 2022;
 - H2Teesside (pre-application stage with application to be submitted quarter 3, 2023); and
 - Lighthouse Green Fuels (pre-application stage – no timescale for submission).
- 2.2.7 Tees CCPP and the York Potash project were both included in the short-list in Chapter 24: Cumulative and Combined Effects [APP-106] of the Onshore ES and in the Habitat Regulations Assessment (HRA) [REP12-120] submitted at Deadline 12. The cumulative effects of these developments with the Proposed Development have already therefore been assessed. Both H2Teesside and Lighthouse Green Fuels are new projects and were not considered in Chapter 24: Cumulative and Combined Effects or the HRA Report.
- 2.2.8 The PINS website confirms that a Scoping Report was submitted for H2Teesside on the 11 April 2023 and PINS' Scoping Opinion was issued on the 17 May 2023. The Scoping Report contains insufficient information to allow a cumulative assessment to be undertaken (setting out only a list of projects, including Net Zero Teesside, considered most likely to result in significant cumulative effects that will be considered in the ES for that project). According to the PINS website, the DCO Application (which will include detailed information on the project) will be submitted in Q3 2023. This is outside the timeframe for this response. Similarly, no preliminary environmental information (PEI) has yet been published in respect of the H2Teesside project.
- 2.2.9 The PINS website notes that the applicant for the Lighthouse Green Fuels project has not set a timetable and no information is therefore available to allow a cumulative assessment to be undertaken.
- 2.2.10 There is therefore no change to the cumulative assessment carried out in Chapter 24: Cumulative and Combined Effects in relation to Nationally Significant Infrastructure Projects given a) the lack of new projects and b) where there are new projects, the lack of information available on which a cumulative assessment could be carried out. Neither the H2Teesside or Lighthouse Green Fuels projects are an existing or approved project for the purposes of cumulative assessment for the purposes of the Town and Country Planning (Environmental Impact Assessment) Regulations (2017).

Screening of Tees Cluster Projects

- 2.2.11 The following projects in the Tees Carbon Capture Cluster either have sought or are expected to seek consent under the Development Consent Order process as discussed above:
- NZT Low Carbon Generating Station (part of the Proposed Development and therefore considered within the Onshore ES as a whole); and
 - the proposed H2Teesside blue hydrogen development (as discussed above).
- 2.2.12 Four other projects in the Teesside Cluster either have sought or are expected to seek consent under the Town and Country Planning Act (1990), these are:
- BOC Teesside Hydrogen CO₂ Capture;
 - Kellas Midstream H2Northeast project;
 - Suez Tees Valley Energy from Waste Plant Carbon Capture Facility; and
 - CF Fertiliser CO₂ Capture project.
- 2.2.13 Neither the Suez Tees Valley and CF Fertiliser CO₂ Capture Projects have been selected as emitters by the Department for Energy Security and Net Zero.
- 2.2.14 BOC's application for a carbon capture plant (Stockton-on-Tees Borough Council planning reference 21/1545/FUL) was submitted and validated on 1 June 2021 and Approved with conditions on 21 July 2021. No environmental information was submitted with the application. The pre-commencement conditions require additional information in relation to contaminated land and ecology (reptile and amphibian avoidance) to be submitted. There is insufficient information provided with the application to allow cumulative effects with the Proposed Development to be assessed.
- 2.2.15 Whilst planning applications for the Kellas Midstream and CF Fertiliser projects may come forward in future, none has been received by Stockton-on-Tees Borough Council to date. There is therefore currently insufficient information available for these developments to be included in the cumulative impact assessment.
- Screening of other Town and Country Planning Act Developments
- 2.2.16 The updated long-list was screened using the methodology set out in Chapter 24 of the Proposed Development ES. This screening for the short list of TCPA applications is contained in Appendix 5. Following this review an additional seven planning applications were identified as shown on Table 2.1. Appendix 5 contains an assessment of each of these applications which is briefly summarised in Table 2.1.
- 2.2.17 Only two of the developments required detailed assessment:
- 127. Suez EfW Carbon Capture Facility – Cumulative air quality assessment – **No Significant Cumulative Effect** (see Appendix 5B).
 - 131. Green Lithium – Low Carbon Lithium Refinery – Cumulative traffic assessment – **No Significant Cumulative Effect** (see Appendix 5B)

**Table 2.1: Additional Town and Country Planning Act Developments on Short List
 (post long-list submitted at Deadline 11, see Document Ref. 9.34 [REP11-013])**

ID	APPLICATION REFERENCE	LOCAL PLANNING AUTHORITY	APPLICANT FOR 'OTHER DEVELOPMENT' AND BRIEF DESCRIPTION	DISTANCE FROM PROPOSED DEVELOPMENT SITE (KM)	STATUS	TIER	REASON FOR INCLUSIONS/ EXCLUSION IN THE SHORTLIST
125	R/2022/0773 /ESM	Redcar and Cleveland Borough Council	Construction of a lithium hydroxide monohydrate manufacturing plant and ancillary development	2.0	Granted	1	Relatively small site no requirement for EIA. Only those with a submitted EIA Scoping Report or ES are considered for shortlisting. EXCLUDED FROM SHORTLIST
126	H/2022 /018 1	Hartlepool Borough Council	Wynyard Park LTD. Outline planning application for the erection of up to 1400 no. dwellings and up to 750 m2 of non-residential floorspace (comprising Use Class E and Sui Generis) with associated parking, landscaping and infrastructure with all matters reserved except access.	6.5	Granted	1	Remote from the Proposed Development. No interaction with study areas. Not a combustion or CC plant, so no potential for cumulative operational air quality effects. EXCLUDED FROM SHORTLIST
127	23/0090/EIS	Stockton-on-Tees Borough Council	Suez Recycling and Recovery UK Ltd. Carbon capture facility for existing Energy from Waste site.	0.2	Pending	1	Operational Noise, Operational AQ, and Ecology effects were assessed in the ES and

							considered not to be significant. All other topics scoped out Remote from the Proposed Development. No interaction with study areas. Cumulative effects on air quality from emissions of Amines/N- amines from the NZT and Suez carbon capture plants have been assessed and shown not be significant.
128	13/0342 /EIS	Stockton-on-Tees Borough Council	Cameron Hall Developments Ltd. Outline application for the construction of up to 500 houses, Primary School (incl. Sport Facilities) and nursery, Retail Units (up to 500 m2), Doctors Surgery, Community Facilities, access and associated landscaping, footpaths and open space (all matters reserved).	4.8	Granted, subject to S106	1	Remote from the Proposed Development. No interaction with PD study areas. Not a combustion or CC plant, so no potential for cumulative operational air quality effects. EXCLUDED FROM SHORTLIST
129	20/2481/EIS	Stockton-on-Tees Borough Council	Northumberland Estates Ltd and Taradina Number Two Ltd. Erection of a class B8 storage and distribution unit with ancillary offices, parking, servicing, landscaping, and formation of new access roads plus associated ancillary works.	5.1	Granted, subject to S106	1	Remote from the proposed development. Significant cumulative effects unlikely Not a combustion or CC plant, so no potential for cumulative operational air

							quality effects. EXCLUDED FROM SHORTLIST
130	08/3644/EIS	Stockton-on-Tees Borough Council	Northshore Development Partnership Ltd. Outline planning application for residential (Class C3), employment (Class B1), health care facility (Class D1), leisure (Class A3, A4, A5, C1 and D2), ancillary retail and services (Class A1 and A2) and car dealership (sui generis) with car parking and associated landscaping and infrastructure improvements.	4.8	Granted	1	Remote from the proposed development. Significant cumulative effects unlikely. Not a combustion or CC plant, so no potential for cumulative operational air quality effects. EXCLUDED FROM SHORTLIST
131	R/2023/0291 /ESM	Redcar and Cleveland Borough Council	Outline application (all matters reserved) for the development of a 3 line low-carbon lithium refinery and associated dock-side reception, handling, storage, and manufacturing facilities for the production of high-quality, battery-grade lithium hydroxide monohydrate, to include the construction of up to three production lines	0.1	Granted	1	Site distant from PCC site. Site is constructed on previously developed land at Teesport. Construction programme unlikely to overlap with PCC construction. Limited potential for impacts. ES identifies no impacts on AQ, offsite impacts on biodiversity, flood risk and hydrology. No landscape or visual effects, no impacts on waste management, noise and vibration, beneficial climate change and contaminated land

							impacts. Analysis of predicted traffic generation shows no significant cumulative effects with NZT
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3.0 NEW OR MATERIALLY DIFFERENT ENVIRONMENTAL EFFECTS NOT IDENTIFIED PREVIOUSLY

3.1 Introduction

3.1.1 This Section of the ES-HRA provides the information defined in paragraph 11.2.2 of Appendix 1 of the response to the SoS RFI dated 30 May 2023.

3.1.2 It reports on any new or materially different likely significant environmental effects (to the extent they are identified) of the Wider NZT Project (both “alone” and “cumulatively”) that have not been identified in the Onshore ES and HRA Report, and/or the Offshore ES (to the extent that its findings relate to the Wider NZT Project). This includes, but is not limited to, consideration of the combined environmental effects at the points of interaction (the ‘Connection Zone’ defined in Section 1.0) between the construction of the Proposed Development and Offshore Elements. It is considered that any potential combined effects would be restricted to the combined construction phase in the Connection Zone and any (limited) recovery period thereafter.

3.1.3 It is important to carefully consider whether a combined effect could occur at all. No combined effects are reasonably expected for the operation and maintenance (O&M) of the Proposed Development and Offshore Elements. O&M activities associated with the Offshore Elements in the Connection Zone are limited to periodic inspection of the CO₂ Export Pipeline (pipeline inspection repair and maintenance activities for example or scour around the Outfall and rock armour). There is no reasonably foreseeable scenario by which these activities would interact with O&M activities associated with the Proposed Development to result in a combined effect.

3.2 Assessment of Combined Effects from Construction in the Connection Zone

3.2.1 Potential combined effects have been assessed as likely to occur during construction activities in the Connection Zone and immediate surroundings (see Definitions in Section 1.0). Outside of the Connection Zone, it is considered very unlikely that there is any potential that combined effects could occur. By way of example, it has been assessed that marine mammals will not be affected by noise arising from the construction of the PCC Site; similarly, the construction of the injection wells offshore at the Endurance Store would not have an effect on onshore receptors by virtue of the distance from the coast.

3.2.2 The need for a combined effects assessment is recognised in the Overarching National Policy Statement (NPS) for Energy (EN-1) (DECC, 2011) and is in accordance with the requirements of the EIA Regulations 2017). The consideration of cumulative and combined effects is also required under the Marine Works Environmental Impact Assessment Regulations (2007, as amended) and the Offshore EIA Regulations 2020.

3.2.3 Appendix 24C: Statement of Combined Effects of the Onshore ES [AS-032] submitted into the DCO Examination in October 2021, is a Statement of Combined Effects (SoCE) document which recognised the high-level principles of the EIA process and the need to consider environmental effects of the Wider NZT Project as a whole. This document sets out a consideration of project-wide effects that may result from the

concurrent development of both the Proposed Development and the Wider NZT Project by providing a summary of the environmental setting of the Proposed Development and the Offshore Elements, the potential environmental effects and, where necessary, proposed mitigation for the onshore and offshore schemes respectively. The potential for combined effects was then assessed based on the assumption of overlapping timeframes.

- 3.2.4 Given the (then) early stage of design and assessment for the Offshore Elements, the assessment of offshore environmental effects at the time of DCO submission was necessarily qualitative and the assessment was primarily based upon professional opinion, albeit based on a realistic worst case scenario and therefore precautionary in nature. The SoCE considered that there was therefore a reasonable level of certainty around the nature of the Offshore Elements and its potential impacts, which was sufficient to allow a more detailed assessment to be carried out, using professional judgment where necessary. Detailed discussions were held with the team supporting the Offshore Elements to acquire the best-available information to inform the SoCE.
- 3.2.5 Based on the screening completed as part of the SoCE, a small number of potential combined effects were identified which wholly related to the geographical area of the Connection Zone (see Figure 1.2). The potential combined effects identified within the original SoCE as arising from the Proposed Development and Offshore Elements were those related to marine ecology, ornithology, fisheries and socioeconomic effects on other users of the sea.
- 3.2.6 This Section of the ES-HRA further updates the combined effects assessment taking into account the findings and conclusions of the Offshore ES (included as Appendix 2).

3.3 Scope and Identification Process for Potential Impacts Arising from Activities occurring in the Connection Zone

- 3.3.1 The interrelationships between the Proposed Development and the Offshore Elements of the Wider NZT Project considered here are those located within and around Tees Bay (i.e. the Connection Zone). Specifically, this relates to the most seaward extent of the marine infrastructure associated with the Proposed Development (i.e. initial part of the CO₂ Export Pipeline from the PCC site to the punch out point in Tees Bay and also the Outfall) and the landward elements of the Offshore Elements (i.e. nearshore installation of the CO₂ Export Pipeline). These are illustrated schematically in Figure 1.2.
- 3.3.2 The Applicants have reviewed the Offshore ES to reconfirm that the key potential environmental impacts associated with the Proposed Development and Offshore Elements in the Connection Zone identified in October 2021 in Appendix 24C: Statement of Combined Effects [AS-032] have not changed and therefore the assessment remains valid. The review has concluded that no new potential impacts that need to be considered further that were not identified in 2021 have been identified in responding to the RFI by the SoS in May 2023. The output of this review process is summarised in Table 3.1, which is an update of Table 24C-6 in Appendix 24C: Statement of Combined Effects [AS-032].

Table 3.1: Summary of Potential Impacts Associated with the Proposed Development and Offshore Elements within the Connection Zone (pre-mitigation)

TOPIC	POTENTIAL IMPACTS
Coastal Water Quality	<p>Accidental release of fuels, chemicals, and other contaminants leading to pollution of the marine environment</p> <p>Increase in suspended sediment concentrations and associated deterioration of localised water quality</p> <p>Disturbance of sediments which may include historical contamination and subsequent pollution risk</p>
Air Quality	<p>Pollution/contamination</p> <p>Deterioration of localised air quality</p>
Aquatic Ecology	<p>Direct loss and physical disturbance to habitat and species</p> <p>Introduction of invasive and non-native species</p>
Marine Ecology	<p>Direct loss and physical disturbance to habitat and species</p> <p>Physical disturbance to benthic habitats and species from increased suspended sediment concentrations (i.e. turbidity) and deposition</p> <p>Changes in underwater soundscape</p> <p>Introduction of invasive and non-native species</p> <p>Disturbance of sediments which may include historical contamination and subsequent pollution risk</p>
Ornithology	<p>Noise disturbance to species</p> <p>Loss of supporting prey features</p>
Fisheries	<p>Temporary access restrictions to fishing grounds</p> <p>Displacement of mariners fishers to neighbouring fisheries and associated pressure</p>
Other Users of the Sea	<p>Disturbance to other local marine users</p> <p>Navigational risk</p> <p>Disruption to recreational traffic</p>
Marine Heritage	<p>Permanent and/or temporary loss of archaeological features.</p>
Climate Change/ Green House Gas (GHG) Emissions	<p>Increases in GHG emissions</p> <p>Loss of carbon sin</p>

3.4 Identification and Assessment of Combined Effects

- 3.4.1 An assessment of the predicted significance of potential combined effects has been undertaken after the application of embedded mitigation that has been designed into the Proposed Development and Offshore Elements. The extent of this embedded mitigation is presented for the Proposed Development within Chapters 4, 5 and 8 to 24 of the Onshore ES. Mitigation is presented for the Offshore Elements in Chapter 6 to Chapter 11 of the Offshore ES (see Appendix 2).
- 3.4.2 A matrix summarising the basis for the assessment of combined effects is provided in Table 3.2 (an update of Table 24C-7 in Appendix 24C: Statement of Combined Effects [AS-032]). This matrix has been used to screen the potential for interactions between the sources of effects and relevant receptors, and to identify receptors which may be affected by the Proposed Development and Offshore Elements of the NZT Project (i.e. the 'combined effects'). Table 3.2 assumes that potential impacts will be managed through Requirement 16, the Construction Environmental Management Plan (CEMP) that controls construction activities to minimise any impact on the environment through relevant regulations, industry good practice and specific measures described within this ES. Other relevant requirements in the draft DCO include: Requirement 3 Detailed Design, Requirement 11 Surface and foul water drainage, Requirement 13 Contaminated land and groundwater, Requirement 14 Archaeology, Requirement 15 Protected Species, Requirement 21 Control of noise – construction, Requirement 23 Piling and penetrative foundation design, Requirement 31 Carbon dioxide capture transfer and storage, and Requirement 37 Nutrient Nitrogen Safeguarding Scheme.
- 3.4.3 The appraisal of the potential for combined effects was carried out by reviewing the information in the Onshore ES for each topic in relation to the Connection Zone. In this regard, it is important to note that the parts of the Proposed Development and Offshore Elements (or parts of them) in the Connection Zone will be constructed sequentially i.e. not at the same time.
- 3.4.4 While scheduling detail remains to be finalised, the following overarching principles apply, the same contractor will execute the parts of the Proposed Development and the Offshore Elements in the Connection Zone, namely the CO₂ Export Pipeline and the Outfall, using the same equipment for both activities. There are also a number of physical constraints which mean that nearshore works associated with the installation of the CO₂ Export Pipeline in the Connection Zone in Tees Bay for the Proposed Development and the Offshore Elements will occur sequentially rather than concurrently. These constraints relate to restrictions on the number of vessels which could safely work within the Connection Zone due to the presence of:
- Central Area Transmission System and Breagh gas pipelines to the south-east of the route of the CO₂ Export pipeline;
 - EDF's Teesside Wind Farm and associated 250 m exclusion zone to the north-west of the route of the CO₂ Export Pipeline.

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- 3.4.5 Pipeline lay for the CO₂ Export Pipeline from nearshore onwards will necessarily commence following completion of the commencement of the CO₂ Export Pipeline and Outfall construction works.
- 3.4.6 As construction activities associated with the Proposed Development and Onshore Elements will not occur simultaneously, there is no potential for effects on any receptor to occur as a result of temporal overlap of activities. There is therefore limited potential for new or materially different effects from those reported upon in the Onshore ES and the Offshore ES associated with the construction works, or effects which would be more significant when both the Proposed Development and Offshore Elements are constructed together.

Table 3.2: Combined Construction Effects Assessment

Receptor (see Table 3.1)	Proposed Development		Offshore Elements	Summary of Considerations
	Landward CO ₂ Export Pipeline	Outfall	Nearshore CO ₂ Export Pipeline	
Coastal Water Quality	*	*	*	<p>Proposed Development: Construction of the Proposed Development is not predicted to result in any likely significant environmental effects for coastal water quality.</p> <p>Offshore Elements: Works for the CO₂ Export Pipeline in the Connection Zone are within Tees Bay and will use a combination of trenchless technology and trenching. The sandy nature of the substrate in Tees Bay means that disturbance will be short-term and localised and there will be no likely significant effects impacts upon the water quality within the bay.</p> <p>No likely significant combined effects in terms of coastal water quality are anticipated and therefore are not considered further.</p>
Air Quality	*	*	*	<p>Proposed Development: Construction of the Proposed Development is not predicted to result in any likely significant environmental effects which could reasonably overlap with emissions associated with the construction of the Offshore Elements.</p> <p>Offshore Elements: Short-term emissions will occur from vessels involved in landfall construction activities and installation of the CO₂ Export Pipeline. The following will limit any potential for combined effects with the Proposed Development</p> <ul style="list-style-type: none"> - Vessels will be subject to the appropriate emissions control. - The dispersive nature of the environment - The direction of prevailing winds (to offshore) - Activities associated with the Offshore Elements will occur after installation of the Outfall

Receptor (see Table 3.1)	Proposed Development		Offshore Elements	Summary of Considerations
	Landward CO ₂ Export Pipeline	Outfall	Nearshore CO ₂ Export Pipeline	
				No likely significant combined effects in terms of air quality are considered likely and therefore are not considered further.
Aquatic Ecology	x	x	x	Works within the Connection Zone are distant from the closest 'linked' Aquatic feature – the inner (freshwater) reaches of the River Tees. No likely significant combined effects in terms of aquatic ecology are anticipated and therefore are not considered further.
Marine Ecology	✓	✓	✓	Activities associated with the construction of the Proposed Development and the Offshore Elements (punchout of the trenchless crossings for the Outfall and the CO ₂ Export Pipeline) have the potential to have a likely combined effect on marine ecology; this is considered further in paragraphs 3.4.7 to 3.4.12 below.
Ornithology	✓	✓	✓	Activities associated with the construction of Proposed Development and the Offshore Elements (punchout of the trenchless crossings for the Outfall and the CO ₂ Export Pipeline) have the potential to have a combined effect on ornithological features. This is considered further in paragraphs 3.4.15 to 3.4.20 below.
Fisheries	✓	✓	✓	Activities associated with the construction of the Proposed Development and the Offshore Elements (punchout of the trenchless crossings for the Outfall and the CO ₂ Export Pipeline) have the potential to have a combined effect on fisheries receptors. this is considered further in paragraphs 3.4.21 to 3.4.24 below.
Other Users of the Sea	✓	✓	✓	Activities associated with the construction of the Proposed Development and the Offshore Elements (punchout of the trenchless crossings for the Outfall and the CO ₂ Export Pipeline) have the potential to have a combined effect on Socioeconomic receptors and other users of the sea. This is considered below.

Receptor (see Table 3.1)	Proposed Development		Offshore Elements	Summary of Considerations
	Landward CO ₂ Export Pipeline	Outfall	Nearshore CO ₂ Export Pipeline	
Marine Heritage		✓	✗	<p>There are no designated shipwrecks, UK Hydrographic Office records on undesignated maritime shipwrecks/obstructions or Historic Environment Records that would be impacted by the Proposed Development or Offshore Elements in the Connection Zone.</p> <p>There is one undesignated paleoenvironmental asset (Palaeochannel (HER 6396)), a small part of which may be lost due to activities associated with the Outfall. The Offshore Elements do not interact with this asset.</p> <p>No likely significant combined effects in terms of marine heritage are anticipated and therefore are not considered further.</p>
Climate Change/ GHG Emissions	✗	✗	✗	<p>Proposed Development: Emissions from vessels involved in construction activities from both the Onshore and Offshore Elements would be subject to appropriate emissions controls and vessel regulatory requirements and vessel numbers are not expected to exceed the relevant screening thresholds for assessment of air quality effects. Aspects of GHG emissions from the Proposed Development will be managed through the CEMP. The appointed contractor(s) will be required to develop and implement a CEMP to measure, monitor and report energy and water consumption and GHG emissions during construction. Measures of specific relevance to the topic of Climate Change and GHG Emissions include the minimisation of fuel consumption on site in vehicles, equipment, and plant through minimisation of idling, and switching off when not being used. Preference will be given to lower carbon fuels such as hydrotreated vegetable oil fuel, biodiesel, or electric powered plant in preference to traditional fossil fuels. Regarding the topic</p>

Receptor (see Table 3.1)	Proposed Development		Offshore Elements	Summary of Considerations
	Landward CO ₂ Export Pipeline	Outfall	Nearshore CO ₂ Export Pipeline	
				<p>of carbon sink, the loss of vegetated areas which can function as carbon sinks will be minimised across the footprint of the Wider NZT Project.</p> <p>Offshore Elements: Short-term emissions will occur from vessels involved in landfall construction activities and installation of the CO₂ Export Pipeline. The loss of blue carbon stores will be minimised via pipeline routeing across the footprint of the Offshore Elements. The mitigation presented in Chapter 11 of the Offshore ES will limit any potential for combined effects with the Proposed Development. No likely significant combined effects in terms of climate change and GHG emissions are anticipated.</p> <p>Above and beyond this, once operational, the Wider NZT Project will be a negative emitter of CO₂.</p>

Marine Ecology

Direct Loss and Physical Disturbance to Habitat and Species

- 3.4.7 The construction of the Onshore and Offshore Elements in the Connection Zone would result in the permanent and temporary loss of habitat across the subtidal zones at the punchout locations of the trenchless crossings for the Outfall and for the offshore CO₂ Export Pipeline.
- 3.4.8 For the Proposed Development, there will be localised permanent habitat loss in association with the installation of the Outfall. The permanent loss as a result of the Proposed Development is predicted to be small (as a worst-case, approximately 100 m² has been assumed, Onshore ES Chapter 14: Marine Ecology [APP-096]).
- 3.4.9 For the Offshore Elements, constructed sequentially after the Proposed Development, there will be temporary and localised habitat loss during landfall construction, trenching and burying of the CO₂ Export Pipeline. Temporary disturbance would occur within a restricted area up to 800 m x 800 m and would include disturbance from vessel anchoring e.g. jack-up barges. If boulders are present in the clearance area the movement of these adjacent to the pipeline corridor may result in small discrete areas of permanent habitat loss. Significant loss of habitat will therefore not occur within the Connection Zone where the CO₂ Export Pipeline will be trenched and buried. As similar habitat types which occur in the Connection Zone can be found across broader geographical scales, the area loss (both temporary and permanent) across both the Proposed Development and Offshore Elements of available habitat in Tees Bay is considered to be negligible (and will not be concurrent) and the combined effect will be not significant.

Physical Disturbance to Benthic Habitats and Species from Increased Suspended Sediment Concentrations (i.e. Turbidity) and Deposition

- 3.4.10 Some limited dredging may be required for the Proposed Development within the vicinity of the construction of the Outfall associated with the emplacement of an outfall head, if one is required.
- 3.4.11 Construction activities (such as punchout or pipeline trenching and burying) associated with the Offshore Elements could temporarily increase suspended sediment concentrations in the area. As trenching and burying during CO₂ Export Pipeline installation as part of the Offshore Elements are likely to occur sequentially rather than concurrently with the construction of the Proposed Development, there is considered no likely potential for a combined effect to occur.
- 3.4.12 Preparatory dredging as part of the construction of the outfall head for the Proposed Development would cover a very small area of seabed and volumes of dredged material would be low (by way of example, the volume provided within the draft DML (included in the draft DCO, Document Ref. 2.1 [REP12-004]) is up to ~5,000 m³). When considered against the context of a dynamic, high-energy environment, changes in suspended solid concentrations (SSC) would be likely to be minimal. Therefore, when considered combined with the predicted extent of seabed disturbance predicted associated with the Offshore Elements, the combined impact

on marine ecology from increases in SSC is predicted to be negligible and the effect would be not significant.

Changes in Underwater Soundscape

- 3.4.13 There is a potential pathway for the combined increase in underwater sound in the marine environment as a result of small-scale piling activities (e.g. pin piling for diffuser head installation for the Outfall and driven piles for trestles for trenchless crossings) and noise from vessels associated with construction works for the Proposed Development and Offshore Elements. Specifically, this relates to the construction works for the Outfall as part of the Proposed Development and the CO₂ Export Pipeline component of the Offshore Elements.
- 3.4.14 However these sound-generating activities associated with the Outfall and the CO₂ Export Pipeline will not occur concurrently as they will be constructed sequentially and in separate parts of Tees Bay. Given this, the combined increase in underwater sound is considered as negligible and the potential for combined effects is not significant.

Ornithology

- 3.4.15 Both the Proposed Development and Offshore Elements involve some construction activities within the Tees Bay which may have the potential to cause disturbance to ornithological receptors.
- 3.4.16 The location of the punchout point for the Offshore Elements (approximately 600 m to 2.2 km offshore dependant on trenchless drilling technique used) is within the boundary of the Teesmouth and Cleveland Coast Special Protection Area (SPA) and is within the foraging range of both common and little terns for which the site is designated. The presence of a pipeline laying vessel may therefore act as a localised barrier or deterrent to foraging seabirds.
- 3.4.17 A similar potential impact is explored and assessed in Chapter 15: Ornithology [**APP-097**], with regards to the installation of the Outfall for the Proposed Development within the Tees Bay. The conclusions drawn and the reasons for those conclusions are equally applicable here: the spatial extent of the area affected (estimated to be approximately 500 m²) represents an insignificant proportion of the wider offshore area of the SPA. This impact will therefore in its own right be imperceptible in magnitude and not significant (neutral) and will therefore not contribute to a cumulative effect on any ornithological receptors. Activities associated with the Proposed Development (such as dredging), were assessed as being not significant with respect to their potential effects on foraging success of seabirds including little tern and common tern (through potential changes to the availability and distribution of prey species).
- 3.4.18 As there will no simultaneous construction activities associated with the Outfall or the CO₂ Export Pipeline (see para. 3.4.4) There is therefore no potential for likely significant combined effects of sedimentation and lowered water quality on diving seabirds.

- 3.4.19 The location of the launch point for trenchless crossings for the Outfall and the CO₂ Export Pipeline site will be within the PCC Site. Therefore there will be no cumulative terrestrial habitat losses and therefore no likely combined effects on terrestrial breeding birds over and above those identified for the Proposed Development alone, which were assessed as not significant.
- 3.4.20 Impacts of noise emissions during construction of the Proposed Development were assessed as not significant on all ornithological receptors. There will therefore be no combined impacts of noise emissions on nesting terrestrial birds, including those within Coatham Dunes that contribute to the “Assemblages of breeding birds – Mixed: Sand dunes and saltmarsh, open lowland waters and their margins” qualifying feature of Teesmouth and Cleveland Coast SSSI.

Fisheries

- 3.4.21 Both the Proposed Development and Offshore Elements would involve some construction activities within the Tees Bay which may have the potential to cause a level of disturbance to commercial fishing activities (including temporary loss of or restricted access to targeted areas).
- 3.4.22 It is noted that simultaneous construction of the CO₂ Export Pipeline and the Outfall is not proposed. Any combined impacts and effects would only occur for those types of commercial fishing found in the Tees Bay, where there is a potential for restricted access as a result of the Proposed Development and Offshore Elements activities occurring. Furthermore, engagement with the local Inshore Fisheries Conservation Authority (IFCA) and the Marine Management Organisation (MMO) has indicated that there is a very limited extent of commercial fishing within this area with effort primarily focused on potting and trapping.
- 3.4.23 Based on the anticipated working areas for the Proposed Development and Offshore Elements, it is considered that displacement of vessels would be limited; this is discussed below in terms of ‘Other Users of the Sea’. Notwithstanding, in order to provide awareness of relevant works for the Proposed Development, the requirement for a Fisheries Liaison Officer (FLO) has been included within the draft DML and in the Offshore ES and an FLO will be appointed. It is considered that this will help provide awareness of works and minimise any residual risk of disturbance.
- 3.4.24 Due to the short duration of the installation of the infrastructure and the sequential working in the bay, any restricted access to fishing grounds would be of a temporary, non-permanent nature for both the Proposed Development and Offshore Elements. Therefore, the likely effect on fishing grounds would be negligible and as such the potential cumulative effect is considered to be not significant.

Other Users of the Sea

- 3.4.25 Based on the information available, it is currently anticipated that the construction of the Proposed Development and Offshore Elements will require use of vessels such as work boat(s) and jack up barge(s). In both cases there will be a need for work vessels to be located at the offshore end of the trenchless bores for the Outfall and the CO₂ Export Pipeline.

- 3.4.26 Vessel activity associated with construction of the Proposed Development will primarily take place within the inner reaches of the Tees Bay (i.e. around the locality of the Outfall). Construction activity for the Offshore Elements may be further out in Tees Bay. However, as noted above at (paragraph 3.4.4 3.4.4), construction of the Outfall and CO₂ Export Pipeline needs to be sequential rather than simultaneous, and only one set of vessels will be active at any one time. It is therefore considered that there is sufficient navigable room around working areas and their associated exclusion zones to minimise navigational risk.
- 3.4.27 In terms of vessel displacement, the marine working areas are within the vicinity of some local third-party traffic such as that associated with the Teesside Wind Farm and localised potting and trapping effort. On this basis, there could be some short-term temporary displacement of other mariners through the presence of workboats and potential exclusion zones.
- 3.4.28 A typical exclusion zone for vessels (i.e. barges and jack-up rigs) is likely to be approximately 500 m. There will therefore be navigable sea room between the vessels and the shore. On this basis, it is considered that there is a very low risk of a potential combined (significant) effect on shipping and navigation arising from the construction of the Proposed Development and Offshore Elements.

Habitats Regulations Assessment

- 3.4.29 In the Habitat Regulations Assessment (See Section 4.0) effects of the Offshore Elements of the Wider NZT Project are evaluated in detail in the Onshore ES which details necessary mitigation measures to protect relevant national site network sites. The potential for ‘in combination’ effects from the Proposed Development and Offshore Elements would only arise if water quality (pollution) impacts on Teesmouth & Cleveland Coast SPA/Ramsar occurred due to both the Proposed Development and the Offshore Elements of the CO₂ Export Pipeline within the Connection Zone, or if harmful underwater sound impacts occurred because of both the construction of the Proposed Development and the Offshore Elements. However, the Offshore ES concludes this eventuality would not arise, or would not result in significant effects if it did arise.
- 3.4.30 The Appropriate Assessment for the Proposed Development (see Section 6 in the HRA [REP12-120]) has investigated all potential impact pathways that could arise on national network sites and concluded that either there is no realistic impact pathway (i.e. regarding impacts on and harbour porpoise within the Southern North Sea SAC which is too far for noise from the Proposed Development to have an effect), or that the pathway exists but will not result in adverse effects on European sites (e.g. air quality), or that sufficient mitigation measures can be implemented to ensure that no adverse effect on integrity would arise (for example with regards to UXO impacts on harbour porpoise outside the Southern North Sea SAC, construction noise disturbance on birds associated with Teesmouth & Cleveland Coast SPA/Ramsar, or water quality impacts).

4.0 LIKELY SIGNIFICANT EFFECTS OF THE WIDER NZT PROJECT

4.1.1 This Section provides an overview of the likely significant effects of the Wider NZT Project by providing information on the likely significant environmental effects arising from both the Proposed Development and Offshore Elements of the Wider NZT Project, as they have been assessed with their respective environmental assessments.

4.1.2 The purpose of bringing the findings and conclusions together in this section, is to consolidate the applicable information from the Onshore and the Offshore ES to assist with identifying new or materially different likely significant environmental effects not identified previously as presented in Section 4.0 of this report.

4.2 Proposed Development

4.2.1 The Onshore ES was prepared in line with the EIA Regulations, 2017, as well as other relevant legislation and associated guidance.

4.2.2 The installation activities associated with the construction of the Proposed Development are considered to represent the largest potential source of impact and effects. Potentially likely significant effects that were highlighted during the impact identification exercise were fully assessed in Chapters 8 -24 of the Onshore ES and further evaluated in each case for the Proposed Development Changes and associated ES Addendums.

4.2.3 The conclusions regarding significance of effects during the construction and operational phase of the Proposed Development were as follows:

- Chapter 8: Air Quality – **Not significant** based on the implementation of standard mitigation measures;
- Chapter 9: Surface Water, Flood Risk and Water Resources - **Not significant** based on the implementation of standard mitigation measures including the use of trenchless technologies and through the use of an appropriate drainage design;
- Chapter 10: Geology, Hydrogeology and Contaminated Land – **Not significant** based on targeted remediation being carried out prior to construction, and the implementation of standard mitigation measures including the appropriate management and storage techniques associated with the use of fuels, lubricants, stored chemical and process liquids;
- Chapter 11: Noise and Vibration – **Not significant** based on the implementation of best practice measures to control noise and vibration from construction related activities;
- Chapter 12: Terrestrial Ecology and Nature Conservation – **Not significant** based on the absence of terrestrial protected species and the implementation of mitigation measures including within the Indicative Landscape and Biodiversity Strategy [APP-078] to reinstate and enhance the habitats within and around the PCC site following construction;

- Chapter 13: Aquatic Ecology and Nature Conservation – **Not significant** based on the implementation of standard mitigation measures including the use of trenchless technologies for water crossings;
- Chapter 14: Marine Ecology and Nature Conservation – **Not significant** based on the implementation of standard mitigation measures;
- Chapter 15: Ornithology – **Not significant** based on the implementation of standard mitigation measures including the use of bored rather than impact piling;
- Chapter 16: Traffic and Transport - **Not significant** based on traffic flow modelling and the implementation of standard mitigation measures which includes the management of construction worker traffic and heavy good vehicles (HGV) movements;
- Chapter 17: Landscape and Visual Amenity – **Not significant** at the majority of viewpoints (VP) based on the temporary nature of construction impacts and the inclusion of embedded mitigation measures, such as through appropriate siting of infrastructure- although moderate adverse (**significant**) residual effects are predicted at VP5 – South Gare Breakwater, VP7 England Coastal Path and VP8 Redcar Seafront for which it is not possible to mitigate due to the proximity of the Proposed Development and scale of the structures. During opening and operation, residual effects remain moderate adverse (**significant**) at VP7 England Coastal Path with partial mitigation through layout and design;
- Chapter 18: Cultural Heritage – **Not significant** based on known assets being avoided by design and through the use of trenchless technologies and the use of existing service corridors for pipelines;
- Chapter 19: Marine Heritage – **Not significant** as seaward assets have been designed to avoid known marine heritage assets;
- Chapter 20: Socio-economics and Tourism – **Significant (major beneficial)** as the construction phase of the Proposed Development as part of the Wider NZT Project would create employment and support the local economy. Direct net employment created (circa 1,320 jobs) if a total net employment of 2,440 jobs have been assessed for the Proposed Development. During operation, approximately 80 direct net jobs are predicted to be created of a total net 130 employees. During the operational stage, residual effects remain assessed as moderate beneficial (**significant**); ;
- Chapter 21: Climate change – **Not Significant** for GHG emissions, in-combination climate change impacts or climate change resilience.
- Chapter 22: Major Accidents and Natural Disasters – **Not significant** based on the implementation of appropriate standards to reduce risks to as low as reasonably practicable and future permits and licences. No additional mitigation measures required;

- Chapter 23: Population and Human Health – **Significant (beneficial)** effects related to construction and operation employment. No other likely significant effects based on the implementation of standard mitigation measures.
 - Chapter 24: Cumulative and Combined Effects – **Not significant** as based on a review of nearby developments (including York Potash developments, Redcar Energy Centre and the wider Teesworks development proposals).
- 4.2.4 The EIA Regulations 2017 require a description of aspects of the project (mitigation measures) that are envisaged to avoid, prevent, reduce or if possible, offset any likely significant adverse effects and proposed monitoring arrangements.
- 4.2.5 Mitigation measures have been actively considered during each stage of the project design as detailed in Chapters 7 - 24 of the Onshore ES and summarised in Appendix 25A: Commitments Register [APP-347].
- 4.2.6 All activities associated with the design, installation and commissioning of the Proposed Development will be carried out under the Applicants’ Environmental and Social Management and Monitoring Plan. This plan will set out the approach to avoiding or mitigating potential environmental impacts, to delivering regulatory compliance and to carrying out the commitments made within the Onshore ES.
- 4.2.7 Operational phase activities associated with the Proposed Development will be carried out within the Applicants’ Environmental Management System (EMS) using the mitigation identified in the Onshore ES and through the Contractor’s CEMP. The EMS provides a framework for establishing environmental objectives and targets, managing environmental impact and risk within these targets, monitoring, and reviewing effectiveness and compliance, and developing further technical and operational improvements, if required. The CEMP will be secured by Requirement 16 of the DCO.
- 4.2.8 In conclusion, the EIA described in the Onshore ES demonstrates that, with the proposed mitigation measures in place, the Proposed Development is not expected to have a significant adverse effect on the environment for the majority of topics. Residual significant adverse effects are predicted for up to three viewpoints related to effects on visual amenity, whilst significant beneficial effects are assessed in relation to employment during the construction and operational stages. The updates to the Onshore ES to address the passing of time in Section 2.0 above have identified no change in the predicted significance of effects identified in the original DCO submission and Addendums. Similarly, Section 3.0 has identified no new or materially different effects for the Proposed Development in combination with the Offshore Elements in the Connection Zone.
- 4.2.9 Environmental effects will be managed, monitored and minimised through adherence to the Applicants’ EMS and regulatory compliance.
- 4.3 Offshore Elements**
- 4.3.1 This Section summarises the findings and conclusions of the Offshore Elements of the Wider NZT Project. The methodology and assessments that underpin these conclusions are presented within Chapter 12 of the Offshore ES (OPRED Reference

D/4271/2021, attached as Appendix 2). For clarification, ‘impacts’ are defined in the Offshore ES as ‘*measurable, physical changes in the receiving environment (e.g. volume, time, area) arising from project activities*’ whilst effects ‘*considers the response of a receptor to an impact*’. The Offshore EIA Regulations 2020 (Schedule 6) require ‘*An assessment of the likely significant effects of the project on the environment*’ to be reported in the *Offshore Elements ES*.

- 4.3.2 The Offshore ES was prepared in line with the Offshore EIA Regulations 2020, as well as other relevant legislation and associated guidance. The installation activities associated with the construction of the Offshore Elements are considered to represent the largest potential source of impact and effects in the Connection Zone. Potentially likely significant effects that were highlighted during the impact identification exercise were fully assessed in Chapters 6-11 of the Offshore ES (see Appendix 2).
- 4.3.3 The Offshore ES has considered the objectives and marine planning policies of the North East Inshore and Offshore Marine Plans and of the East Inshore and East Offshore Marine Plans. These have been considered across the range of policy topics including biodiversity, natural heritage, cumulative impacts and oil and gas.
- 4.3.4 The conclusions regarding significance of effects were as follows given the mitigation and monitoring measures that will be implemented:
- Seabed disturbance - including benthic ecology, fish and shellfish, birds, marine archaeology and coastal processes - **Not significant** based on the seabed area affected and the extent of similar habitat available;
 - Underwater sound – including potential to cause injury or disturbance to marine mammals during piling, seismic surveys, seabed preparation surveys, presence of jack up rigs and vessels and dredging activities - **Not significant** based on, the area and short time period over which the impact will occur, and the mitigation measures that will be enacted including adherence to the JNCC protocols;
 - Discharges to sea (including mud, cuttings, cement during drilling; chemicals used in CO₂ Export Pipeline flooding, hydrotesting and dewatering during installation of subsea infrastructure) and formation water displacement during well injection – **Not significant** based on the low sensitivity / exposure of receptors (water column) and the limited area of habitat affected (seabed);
 - Physical presence of vessels and infrastructure and equipment with the potential to obstruct or exclude shipping, fisheries, other sea users and ecological receptors e.g. birds and marine mammals) – **Not significant** based on the low sensitivity of assessed receptors or the negligible magnitude of impact on higher sensitivity receptors and short term temporary scope of disturbance;
 - Accidental events (including hydrocarbon releases, CO₂ or brine leakage)– **Not significant** based on the remote likelihood of a worst-case release occurring, and the prevention, mitigation and monitoring measures that will be implemented to prevent a release of either hydrocarbon, brine or CO₂; and

- Atmospherics and climate – including vessel fuel combustion during installation, commissioning, drilling of wells and operations - **Not significant** based on: (a) assessment concluding that emissions will not affect air quality in the local or wider area, and (b) the expected emissions from the Offshore Element comprising a negligible proportion of UK carbon budget.
- 4.3.5 The Offshore EIA Regulations require a description of the features of the project or measures envisaged in order to avoid, prevent, reduce or offset likely significant adverse effects on the environment and proposed monitoring arrangements.
- 4.3.6 Mitigation measures have been actively considered during all project design stages as detailed in Chapters 6 - 11 and summarised in the Commitments Register (Appendix C) of the Offshore ES (Appendix 2).
- 4.3.7 All activities associated with the design, installation and commissioning of the Offshore Elements will be carried out under the Applicant’s Environmental and Social Management and Monitoring Plan. This plan will set out the approach to avoiding or mitigating potential environmental impacts, to delivering regulatory compliance and to carrying out the commitments made within this ES.
- 4.3.8 Operational phase activities associated with the Offshore Elements will be carried out within the Applicant’s EMS. Key mitigation measures are set out in Appendix C to the Offshore ES (see Appendix 2 to this document).
- 4.3.9 The EMS provides a framework for establishing environmental objectives and targets, managing environmental impact and risk within these targets, monitoring, and reviewing effectiveness and compliance, and developing further technical and operational improvements, if required.
- 4.3.10 In conclusion, the EIA described in the Offshore ES demonstrates that, with the proposed mitigation measures in place, the Offshore Elements are not expected to result in likely significant effects on the environment. Section 3.2 has identified no new or materially different effects for the Proposed Development in combination with the Offshore Elements in the Connection Zone.
- 4.3.11 Environmental effects will be managed, monitored and minimised through adherence to the Applicant’s EMS and regulatory compliance.
- 4.4 Habitats Regulations Assessment**
- 4.4.1 This Section provides a response to the SoS to provide a HRA for the Wider NZT Project including both the Proposed Development and the Offshore Elements. This is based on the HRA Report for the Proposed Development [REP12-032] submitted into the Examination at Deadline 12 and information in the Offshore ES (see sections 6.9, 7.9, 8.8, 9.8 and 10.3 in Appendix 2).
- 4.4.2 There is potential for the Offshore Elements of the Wider NZT Project including the CO₂ Export Pipeline from Teesside to the Endurance Store to result in its own impacts on ‘European sites’ which no longer form part of the European Union’s Natura 2000 network but instead, form part of a new national site network. Most notably this could be through underwater sound impacts on harbour porpoise associated with Southern North Sea Special Area of Conservation (SAC) (which lies approximately 100

km east of the PCC Site) during construction or O&M. The CO₂ Export Pipeline connecting the Proposed Development to the Endurance Store traverses the Southern North Sea SAC, whilst the Endurance storage facility itself is located within the Southern North Sea SAC. The Southern North Sea SAC is very large (almost 37,000 km²) and the Offshore Elements overlap with a small part of the northern section of the site that is important for harbour porpoises during the summer season. It would have a permanent footprint of 0.1683 km², 0.0016% of the SAC. The Offshore Elements have been the subject of assessment as reported in the Offshore ES with impacts on European Sites discussed in that document (see in sections 6.9, 7.9, 8.8, 9.8 and 10.3 in Appendix 2). Other than underwater sound disturbance of mammals, potential impacts on European sites covered in the Offshore ES are effects on the foraging value of Southern North Sea SAC to harbour porpoise, and water quality and sediment dispersal impacts of CO₂ Export Pipeline installation and construction/decommissioning on the same SAC or on the marine open water component of the Teesmouth & Cleveland Coast SPA/Ramsar. The latter area is used for fishing by the designated tern populations. As the Endurance Store geological storage facility is located within the SAC, direct habitat loss could also be possible.

- 4.4.3 Disturbance of harbour porpoise associated with Southern North Sea SAC, is discussed in various sections of the Offshore ES, notably section 9.4.5.2 (see Appendix 2). The area that the Offshore Elements overlaps with represents the area of the SAC which is important for harbour porpoise in the summer. It is expected that all species would become habituated to vessel presence and would be able to rapidly recover from any disturbance. Vessel presence would be temporary and short-term, slow-moving, and occurring against an already busy shipping background, as such it is expected that any physical presence impacts would not be significant. With regard to underwater noise from piling and seismic surveys, the Applicant intends to adopt mitigation measures per JNCC guidelines (JNCC 2010 and 2017). With the implementation of these measures, it is concluded that the potential for injury of marine mammals from piling and seismic surveys would be effectively mitigated.
- 4.4.4 With regard to impacts on foraging value for porpoise of Southern North Sea SAC, the Offshore ES considered the impact of the minor changes to the seabed substratum associated with the Offshore Elements, including within the context of other schemes occurring in the Southern North Sea SAC (specifically Kumatage gas field, the existing Langede gas export pipeline, the proposed Creyke Beck A transmission asset and the proposed Hornsea Project Four offshore windfarm (construction planned for 2026)). It concludes that these projects cumulatively are unlikely to have a significant effect on any harbour porpoise prey species and would not affect the ability of prey species (especially sandeel) to reproduce. The Offshore Elements are concluded not to result in any reduction in the availability or distribution of harbour porpoise prey species.
- 4.4.5 With regard to impacts on the foraging value for SPA species, only little tern and red-throated diver were considered sensitive to impacts associated with habitat loss and only impacts on the little tern colonies of the Teesmouth & Cleveland Coast SPA pose potential for in combination effects with the Proposed Development. Site-specific tracking data for little tern from the Teesmouth and Cleveland Coast SPA indicate

that birds from the SPA exhibit a mean-maximum seaward extent of 3.45 km and a maximum alongshore extent of 5 km to the north and south. The Offshore Elements are therefore beyond the foraging range of little tern and no adverse effect on integrity would arise.

- 4.4.6 With regard to sediment process impacts of the Offshore Elements, Tees Bay is noted as a sediment sink and so under calm or normal metocean conditions, sediment is drawn towards the coast. Therefore, the water is likely to be relatively turbid close to shore. It is therefore expected that the coastal processes regime will be generally tolerant of increased suspended sediment, sediment transport and temporary impedance of sediment transport. Any disturbed sediment would be readily reincorporated into the local sediment regime. Receptor sensitivity is therefore expected to be low. While there may be some increase in suspended sediments as a result of the Offshore Elements, this is not expected to be noticeable above natural variation and so the local coastal processes would not be affected in the long-term; therefore, receptor vulnerability is expected to be low.
- 4.4.7 With regard to water quality (pollution) the Offshore ES states that in the unlikely event of loss of diesel from the deepwater pipelay vessel or at the Endurance Store, surface contamination of the Southern North Sea SAC would occur. While a hydrocarbon release could result in demonstrable change to receptors, a review of UK Continental Shelf historical data relating to hydrocarbon release events confirm that the likelihood of such an event is remote. Given the mitigation measures that would be in place as detailed within the Offshore ES and the remote likelihood of the release happening, the consequence is considered to be low and the effect is assessed to be not significant.
- 4.4.8 Operational discharges to Tees Bay from the Proposed Development via the Outfall will not affect the Southern North Sea SAC located 100 km east of the PCC Site, as they will be rapidly diluted in Tees Bay.
- 4.4.9 Effects of the Offshore Elements of the Wider NZT Project are evaluated in detail in the Offshore ES which details necessary mitigation measures to protect relevant national network sites. The potential for ‘in combination’ effects from the Proposed Development and Offshore Elements would only arise if water quality (pollution) impacts on Teesmouth & Cleveland Coast SPA/Ramsar occurred due to both the Proposed Development and the Offshore Elements of the CO₂ Export Pipeline within the Connection Zone, or if harmful underwater sound impacts occurred because of both the construction of the Proposed Development and the Offshore Elements. However, the Offshore ES concludes this eventuality would not arise, or would not result in significant effects if it did arise.
- 4.4.10 The Appropriate Assessment for the Proposed Development (see Section 6 in the HRA [REP12-120]) investigated all potential impact pathways that could arise on national network sites and concluded that either there is no realistic impact pathway (i.e. regarding impacts on harbour porpoise within the Southern North Sea SAC which is too far for noise from the Proposed Development to have an effect), or that the pathway exists but will not result in adverse effects on European sites (e.g. air quality), or that sufficient mitigation measures can be implemented to ensure that

no adverse effect on integrity would arise (for example with regards to UXO impacts on harbour porpoise outside the Southern North Sea SAC, construction noise disturbance on birds associated with Teesmouth & Cleveland Coast SPA/Ramsar, or water quality impacts).

5.0 CONSULTATION

5.1.1 This Section provides a signposting to the consultation that has been undertaken for the Proposed Development and the Offshore Elements of the Wider NZT Project. This section demonstrates to the SoS that both the Proposed Development and the Offshore Elements applications have allowed for appropriate and robust consultation to occur in both pre-application submission and, in the case of the NZT DCO, the examination stage.

5.2 Proposed Development

5.2.1 A Consultation Report [APP-068] was submitted as part of the DCO Application and provides information in respect of the Applicants' staged pre-application consultation on the Proposed Development and the analysis of the comments and feedback that has been received to the pre-application consultation.

5.2.2 The Applicants carried out non-statutory and statutory pre-application consultation, and various EIA consultation activities. As well as being summarised in the Consultation Report [APP-068], EIA consultation activities are also set out where relevant in the Environmental Statement.

5.2.3 Subsequently the Applicants gave requisite notice of the accepted DCO Application pursuant to section 56 of the 2008 Act, and the Planning Inspectorate then received and published the 'relevant representations'. The Examination for the DCO ran from 10th May 2022 to 10th November 2022 and during this time written representations and various other information was submitted to the Examining Authority (ExA) for consideration. Six Issue Specific Hearings (ISHs) were held on a range of matters, including on environmental topics.

5.3 Offshore ES

5.3.1 Information on the consultation process and activities is submitted as part of the Offshore ES (Appendix 2) and provides information in respect of the pre-application consultation and the analysis and addressing of the comments received during the pre-application consultation. Meetings have been by the Applicant with the National Federation of Fishermen's Organisations, Holderness Fishing Industry Group, the North Eastern Inshore Fisheries and Conservation Authority, the Maritime and Coastguard Agency, Trinity House, Humber and Teesside Port Authorities, Natural England and the Joint Nature Conservation Committee (JNCC) over the course of the Development to date.

6.0 SUMMARY AND CONCLUSIONS

6.1.1 Based on the information collated from the Onshore ES , HRA (and updates submitted during Examination) and the Offshore ES (and incorporated HRA) and then appraised and assessed in this ES-HRA Addendum, the Applicants for the Proposed Development and Offshore Elements have concluded that:

6.2 Section 2 Updates to the Onshore ES and HRA

6.2.1 Section 2 addresses the passage of time section in relation to the Onshore ES (and ES Addendums) on a topic by topic basis. This assessment concludes that for the Onshore ES there are no changes to potential impacts, mitigation measures and likely significant residual environmental effects arising from the passing of time since the DCO Application was submitted. As the Offshore ES is current and up to date, the passage of time assessment is not required.

6.2.2 Section 2 also updates the Cumulative Impact Assessment contained in Chapter 24 in the Onshore ES [APP-106] to address the passage of time. No additional potential cumulative effects from an updated review of Nationally Significant Infrastructure Projects or projects covered by the Town and Country Planning regime were identified.

6.3 Section 3 New or Materially Different Environmental Effects

6.3.1 Section 3 of the ES-HRA Addendum provides the information defined in paragraph 11.2.2 of Appendix 1 of the response to the SoS RFI dated 30 May 2023. It reports on any new or materially different likely significant environmental effects (to the extent they are identified) of the Wider NZT Project (both “alone” and “cumulatively”) that have not been identified in the Onshore ES (and ES Addendums) and HRA Report, and/or the Offshore ES (to the extent that its findings relate to the Wider NZT Project).

6.3.2 This assessment concluded that the construction activities associated with the Proposed Development and Onshore Elements will not occur simultaneously, there is no potential for effects on any receptor to occur as a result of temporal overlap of activities. There is therefore limited potential for new or materially different effects from those reported upon in the Onshore ES and the Offshore ES associated with the construction works, or effects which would be more significant when both the Proposed Development and Offshore Elements are constructed together.

6.4 Section 4 Likely Significant Effects of the Wider NZT Project

6.4.1 For the Proposed Development, the Onshore ES demonstrates that, with the proposed mitigation measures in place, the Proposed Development is not expected to have a significant adverse effect on the environment for the majority of topics. Residual significant adverse effects on visual amenity are predicted for up to three viewpoints, whilst significant beneficial effects are assessed in relation to employment during the construction and operational stages. The updates to the Onshore ES to address the passing of time in Section 2.0 above have identified no change in the predicted significance of effects identified in the Onshore ES and Addendums.

- 6.4.2 For the Offshore Elements, the EIA described in the Offshore ES demonstrates that, with the proposed mitigation measures in place, the Offshore Elements are not expected to result in likely significant effects on the environment.
- 6.4.3 Section 3 has also identified no new or materially different effects for the Proposed Development in combination with the Offshore Elements in the Connection Zone.
- 6.4.4 For the Habitat Regulations Assessments for the Proposed Development and Offshore Elements, since the Proposed Development and Offshore Elements contain adequate mitigation to protect European sites, no ‘in combination’ effect would arise between the Proposed Development and Offshore Elements.

6.5 Section 5 Consultation

- 6.5.1 Section 5 provides a signposting to the consultation that has been undertaken for the Proposed Development and the Offshore Elements of the Wider NZT Project. This has allowed for appropriate and robust consultation to occur in both pre-application submission and in the case of the NZT DCO, the examination stage.

6.6 Overall Conclusions

- 6.6.1 Based on the information in the Onshore ES and the Offshore ES and associated HRAs which has been appraised and assessed in this ES-HRA, the Applicants have concluded that:
- There are no new or materially different effects both “alone” and “cumulatively” that have not been identified in the Onshore ES and HRA Report, and the Offshore ES (including the Onshore HRA) to the extent that its findings relate to the Wider NZT Project;
 - There are no changes to the environmental information that was relied upon in the production of the ES that would change the conclusions of the Onshore ES, HRA and supporting documentation; and
 - the assumptions applied to the environmental impact assessments undertaken as part of the Offshore ES that relate to the construction and operation of the Offshore Elements of the Wider NZT Project (including the offshore HRA) remain valid and correct at the time of writing (August 2023).

REFERENCES

JNCC guidance for minimising the risk of injury to marine mammals from geophysical surveys (seismic survey guidelines): JNCC, 2017

At: <https://data.incc.gov.uk/data/e2a46de5-43d4-43f0-b296-c62134397ce4/jncc-guidelines-seismicsurvey-aug2017-web.pdf>

Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise: JNCC, 2010

At: <https://data.jncc.gov.uk/data/31662b6a-19ed-4918-9fab-8fbcff752046/JNCC-CNCB-Piling-protocol-August2010-Web.pdf>

Marine Works Environmental Impact Assessment Regulations (2007, as amended)

At: <https://www.legislation.gov.uk/uksi/2007/1518/contents/made>

Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations (2020)

At: <https://www.legislation.gov.uk/uksi/2020/1497/contents/made>

Overarching National Policy Statement (NPS) for Energy (EN-1) (DECC, 2011)

At:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf

Planning Act (2008)

At: <https://www.legislation.gov.uk/ukpga/2008/29/contents>

Town and Country Planning Act (1990)

At: <https://www.legislation.gov.uk/ukpga/1990/8/contents>

UK Government's Carbon Budget Delivery Plan – HC 1269 (2023)

At: <https://www.gov.uk/government/publications/carbon-budget-delivery-plan/carbon-budget-delivery-plan>

APPENDIX 1 APPLICANTS' RESPONSE TO THE SECRETARY OF STATE 30TH MAY 2023

Date: 30th May 2023
Your Ref: EN010103
Our Ref: 13626

DWD

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Dear Mr Wagstaff

APPLICATION REF: EN010103 – THE NET ZERO TEESSIDE PROJECT

SECRETARY OF STATE’S REQUEST FOR FURTHER INFORMATION IN RESPECT OF THE NET ZERO TEESSIDE DEVELOPMENT CONSENT ORDER (‘THE NET ZERO TEESSIDE ORDER’) APPLICATION

LAND AT AND IN THE VICINITY OF THE FORMER REDCAR STEEL WORKS SITE (TEESWORKS SITE), REDCAR AND IN STOCKTON-ON-TEES

I write on behalf of the Applicants, Net Zero Teesside Power Limited and Net Zero North Sea Storage Limited, in response to the Secretary of State’s request for further information dated 16th May 2023 relating to the Net Zero Teesside (“N^ZT”) Development Consent Order (“D^{CO}”) Application.

In response to the Secretary of State’s request, the following updated Application documents accompany this letter:

1. Application Guide (Document Ref. 1.2, Rev. 18.0) – new and updated documents highlighted in yellow.
2. Funding Statement and appendices (Document Ref. 3.3, Rev. 3.0) – clean and tracked versions.
3. Planning Statement and appendices (Document Ref. 5.3, Rev. 3.0) – clean and tracked versions.

The above documents can be downloaded using the following link to a secure file share site:
<https://dwd.ctit.co/url/tn2rpiiezmq4nqt7>

Request for Further Information

The Applicants’ responses to the Secretary of State’s request for further information are provided below. The same headings and numbering used in the Secretary of State’s letter have been adopted below.

The terms “offshore elements” and “Wider NZT Project” are not defined in the request. For clarity, in our below responses we adopt the following definitions:

- **"NEP Project"** – the CO₂ transportation and storage system that will enable CO₂ from carbon capture utilisation and storage ("CCUS") projects on Teesside and the Humber to be transported to the Endurance Store, encompassing the Offshore Elements;

- **“Offshore Elements”** – the works below Mean Low Water Springs (**“MLWS”**), promoted by the Northern Endurance Partnership (**“NEP”**) and relating to CO₂ transport and storage comprising:
 - the construction and operation of the NZT CO₂ export pipeline “seaward” of Mean Low Water Springs (being the boundary of Work Number 8 as described in Schedule 1 of the final DCO [REP12-003]) to the Endurance Store; and
 - the operations to inject CO₂ from the NZT CO₂ export pipeline into a part of the Endurance Store¹.
- **“Overlap Zone”** – the overlapping area of seabed within which both the Hornsea 4 Project and the NEP Project are proposed to be consented; and
- **“Wider NZT Project”** – the development that is the subject of the present DCO Application (the **“Proposed Development”**) together with the Offshore Elements. (The Applicants consider that this definition is consistent with and reflects paras. 1.1.4-1.1.5 of the Applicants' Environmental Statement Non-Technical Summary [APP-081], in accordance with paragraph 3 of the Secretary of State’s letter).

Other defined terms are as defined in the body of this letter, or otherwise as defined in the relevant Applicants' submissions being cited.

The Wider Net Zero Teesside (“NZT”) project & offshore consenting

Paragraph 3

The Applicants have carefully considered this request, noting that they have provided detailed and robust information, technical evidence and submissions on this matter, both into the NZT and Hornsea 4 DCO examinations. In order to assist the Secretary of State the Applicants have consolidated and summarised this information as follows:

- The boundary of the Proposed Development does not extend to the Overlap Zone and thus the Proposed Development remains acceptable and deliverable in its own right, regardless of the Secretary of State's determination in his decision-making on the Hornsea 4 DCO application in relation to the Overlap Zone (see e.g. paras. 6.2.8-12 of **REP 2-060 (e-page 12)**; **REP4-030 (e-pages 8-9)**).
- If the Overlap Zone cannot be utilised, the Endurance Store could only be developed outside the Overlap Zone, meaning it would only achieve approximately 30% of its potential capacity (see e.g. para. 10.4 of bp's technical submissions to the Hornsea 4 DCO examination, appended at **REP2-021 (e-page 135)**; para. 6.2.30 of **REP8-049 (e-page 22)**).
- In such circumstances, the Wider NZT Project remains viable, in principle. It is anticipated that the CO₂ emitted and captured from the Proposed Development and transported and injected through the Offshore Elements will largely settle at the crest of the Endurance Store outside of the Overlap Zone and will be less in volume than the 30% technical storage capacity available within this residual area of the Endurance Store (see e.g. para. 8.4.2 of **REP6-122 (e-page 20)** and paras. 9.4.9 and 9.4.16 of **REP11-014 (e-pages 41-42)**).

¹ The works to inject CO₂ from the NZT CO₂ export pipeline into the Endurance Store comprise infrastructure that it is intended will also be utilised for the purposes of injection of CO₂ from the CO₂ export pipeline for the Zero Carbon Humber project. However the common infrastructure for the injection of CO₂ into the Endurance Store would be required for the Wider NZT Project in any event and is not contingent on the Zero Carbon Humber project coming forward. A further explanation of the relationship between the Wider NZT Project, the Zero Carbon Humber project and the Northern Endurance Partnership is provided at pages 7 to 9 of the Applicants Written Summary of Oral Submission at Issue Specific Hearing 1 [**REP1-035**].

- However, in these circumstances, where only 30% of the Endurance Store's potential capacity is achieved, the wider East Coast Cluster ("ECC") plan, which aims to deliver 20 million tonnes per annum (MTPA) of CCUS capacity by 2030 with further expansion to 27 MTPA by 2035, would be rendered unviable (see e.g. **REP4-030 e-pages 6-9**).

This is further articulated at paras. 6.2.27-32 of **REP8-049 (e-pages 21-22)**.

The Applicants have also made submissions on the potential impact of the Wider NZT Project on the Overlap Zone, in circumstances where the Overlap Zone cannot be used for CCUS and the capacity of the Endurance Store is thereby constrained. The conclusion was that, even allowing for the potential for some small part of the CO₂ plume to migrate slightly into the Overlap Zone in the worst case, there was not anticipated to be any inconsistency between the development of wind turbines within the Overlap Zone and the storage of emissions captured from the Proposed Development within the remaining part of the Endurance Store outside of the Overlap Zone (for the reasons described in depth in para. 9.4.9 of **REP11-014 (e-pages 41-42)**).

The Applicants note that the Secretary of State's letter requests "*further information*" and it is acknowledged that the Secretary of State may be seeking some specific information in addition to that summarised and signposted above. The Applicants are not aware of any change in circumstances since the above information was provided which would require that information to be amended, supplemented or updated, or which would lead to any change in the conclusions drawn from it. If there is any specific further information in relation to this matter that the Secretary of State requires in order to inform his decision-making, the Applicants would ask that this be identified so that they can assist by providing it.

Paragraph 4

As summarised above and previously submitted by the Applicants, the Proposed Development and the Wider NZT Project remain viable, in principle, without the use of the Overlap Zone, and the Proposed Development alone does not extend to the Overlap Zone. If the Overlap Zone is not used, there is no interface between the Wider NZT Project and the Hornsea 4 Project.

However, if the NEP Project is to be developed as envisaged, fully utilising the Endurance Store to enable the ECC plan, co-existence of the NEP Project and the Hornsea 4 Project across the whole of the Overlap Zone is not feasible, and there are no management measures which could facilitate this (see e.g. **REP4-030 e-page 7**).

The feasibility of co-existence was contested by bp (on behalf of the NEP) and Hornsea Project Four Limited in the Hornsea 4 DCO examination and its post-examination submissions, and it was the Applicants' position throughout the NZT DCO examination that these matters should not be re-litigated in parallel (see e.g. para 6.4.2 of **REP13-019 (e-page 18)**). Nevertheless, bp's technical evidence as to the infeasibility of co-existence across the whole of the Overlap Zone (originally submitted into the Hornsea 4 DCO examination) was provided to the NZT examination as appendices at **REP2-021 e-page 115** onwards; **REP4-030 e-page 15** onwards and **REP6-121 e-pages 247-267**.

In a situation where conflicts between the Wider NZT Project and Hornsea 4 Project remain to be resolved by the time of consenting the Offshore Elements, these conflicts would fall to be managed through the offshore consenting process discussed in the below response to paragraph 5 of the Secretary of State's letter.

The Applicants are not aware of any other potential adverse impact on, or conflict with, any other proposed development in the area of seabed within which the Endurance Store is located; however, any such interface that did emerge would also be identified and assessed as part of the offshore consent process as necessary.

Paragraph 5

A note on the consents required for the Offshore Elements was submitted by the Applicants at Appendix 5 of **REP1-035 (e-pages 163-164)**. That note observed that the main outstanding consent is a storage permit under the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010 ("**2010R**"), to be granted by the North Sea Transition Authority ("**NSTA**"). Said consent cannot be granted without the agreement of the Secretary of State, acting by the Offshore Petroleum Regulator for Environment and Decommissioning ("**OPRED**"), pursuant to Regulation 4 of the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 ("**2020R**").

As observed at para 6.2.46 of **REP8-049 (e-pages 24-25)**, it is extremely likely that the Hornsea 4 DCO will have been determined before decisions are made under the offshore consenting process, and hence there should not remain any unresolved conflicts between the Wider NZT Project and Hornsea 4 Project by the time of those decisions. Either the Hornsea 4 DCO will have provided for adequate safeguards for bp (on behalf of the NEP) or it will not, in the latter case meaning – absent an agreement with Orsted – bp would be unable to carry out works in the Overlap Zone.

Nevertheless, in the unlikely scenario that conflicts should fall to be resolved in the offshore consenting process, the aforementioned para 6.2.46 described how Orsted would have the ability to make submissions into the consenting process for consideration by the decision-makers. Any conflict or competing interest remaining between the Wider NZT Project and the Hornsea 4 Project could be considered and addressed as part of this process. For the purposes of determining the application for the NZT DCO, the Secretary of State must assume that this process will be carried out by the decision-makers appropriately and with regard to all material considerations.

A summary of how the process can be used to manage conflicts or competing interests is as follows:

Offshore environmental impact assessment ("ESIA")

- As a project falling under Schedule 1, para. 3 2020R, the Offshore Elements must not be consented by the NSTA without the agreement of the Secretary of State, acting by OPRED (and references in the following to OPRED mean OPRED on behalf of the Secretary of State). OPRED cannot agree to the grant of consent for a project unless an ESIA has been carried out (Regulations 4 and 5(1) 2020R).
- Before submitting an environmental statement, a developer may apply for a scoping opinion from OPRED (Regulation 9 2020R) or engage in an informal scoping process to inform the scope and level of detail of the environmental statement to be submitted. In respect of the ESIA being prepared for the offshore components of the NEP Project, bp engaged in an informal scoping process with OPRED in September – November 2021. As part of this, bp engaged with Orsted to ensure that they had the opportunity to comment on the scope of the ESIA, and Orsted provided its comments on 15 October 2021.
- Once the developer has submitted an environmental statement to OPRED, the developer must engage in a period of public consultation, during which any person may submit representations to OPRED in relation to the project (Regulation 11(3) 2020R). Should Orsted have concerns about the environmental impacts of the Offshore Elements, it can make submissions to OPRED at this stage. OPRED may, as a result of this or otherwise, request further information from the developer (Regulation 12 2020R).
- In then deciding whether to agree to the grant of consent for the project, OPRED must reach a conclusion on the significant effects of the project on the environment, taking into account the environmental statement, information obtained by or provided to OPRED, any representations received relating to the environmental effects of the project and any conditions that OPRED can attach to the agreement to the grant of consent (Regulation 14(1)-

(2) 2020R). OPRED would therefore be required to take into account relevant submissions made by Orsted and weigh those when reaching a conclusion on the environmental effects of the project.

- When OPRED notifies the developer of agreement to the grant of consent, OPRED may attach conditions to the agreement that the developer must comply with, including environmental conditions to avoid, prevent, reduce or offset any significant adverse effects on the environment (Regulation 4(4) 2020R).

Storage permit

- A 'storage licence' was granted for the Endurance Store in 2012 (Licence CS001) pursuant to s.18 Energy Act 2008 and under which bp (on behalf of the NEP) is the operator. The licence holder must subsequently apply to the NSTA for a storage permit in order to construct facilities to inject and store CO₂ (Regulation 6 2010R), providing the information set out in Regulation 6(3) 2010R (as supplemented by guidance). No storage permits have yet been granted in the UK, so the following is the Applicants' understanding of the relevant regulations and guidance.
- Before granting a storage permit, the NSTA must be satisfied of certain matters in Regulations 6 and 7 2010R, including that:
 - under the proposed conditions of use of the storage site, there is no significant risk of leakage or of harm to the environment or human health; and
 - the storage complex and surrounding area have been sufficiently characterised and assessed in accordance with the criteria set out in Annex I to Directive 2009/31/EC, which include that the *"activities around the storage complex and possible interactions with these activities (for example, exploration, production and storage of hydrocarbons...)"* must be documented (Annex 1(1)(k)).

It is anticipated that the Hornsea 4 Project would fall to be considered as part of this assessment as a potential future activity in the vicinity of the Endurance Store.

- The NSTA's 'Guidance on Applications for a Carbon Storage Permit' (December 2022) directs that, in the 'Appraise Phase' leading up to grant of a storage permit, the licence holder must prepare and keep updated a Stakeholder and Engagement Plan to *"demonstrate to the NSTA that the Licensee will consult and, as applicable, has consulted with other interested parties that might be affected by the proposed appraisal activities and any subsequent development activities under any storage permit (if granted) and that such parties will not be unduly compromised by any appraisal and storage development plans."* (para. 77).

It is anticipated that bp (as licence holder) will therefore continue its ongoing dialogue with Orsted as an interested party potentially affected by development of the Endurance Store.

- Having satisfied itself of the regulatory requirements and (it is anticipated) weighed the outcome of the licence holder's consultation with interested parties, the NSTA must decide whether to grant the storage permit. If deciding to grant the permit, the NSTA must include *"requirements designed to prevent any undue interference with other uses of the area surrounding the storage site"* (Regulation 8(1)(f) 2010R). The NSTA could therefore impose requirements on the permit in order to manage any conflicts or competing interests it had identified through the decision-making process.
- While the application is before the NSTA, it may require the licence holder to make any modifications the NSTA considers necessary to the various supporting plans submitted in support of the application (e.g. Regulation 7(5)-(6) 2010R). Once granted, the permit will

include provisions allowing for modifications where there are certain changes to the operation of the site (Regulation 11 2010R).

Taken together, this robust regime allows OPRED and the NSTA sufficient ability to manage environmental effects and interactions with activities around the storage site through the storage permit application and ESIA.

Environmental Assessment

Paragraph 6

The Applicants have set out their response to paragraph 6 in **Appendix 1** of this letter.

Paragraph 7

The Applicants' detailed submissions at Appendix 6 of **REP1-035 (e-page 166 onwards)**, as further discussed at paras. 6.2.20-25 of **REP8-049 (e-pages 20-21)**, express the Applicants' view that there is no legal obligation to consider any impact on the Hornsea 4 Project as part of the NZT DCO environmental statement.

Nevertheless, in Appendix 1 to **REP4-030 (e-pages 6-11)**, the Applicants voluntarily undertook an assessment of the likely impacts on the Hornsea 4 Project of being prevented from constructing and operating turbines within the Exclusion Area (the majority part of the Overlap Zone).

In summary, the assessment concluded that, without mitigation, the impact of Orsted being unable to construct the Hornsea 4 Project within the Exclusion Area would lead to a reduction of approximately 45 turbines from its maximum design envelope, resulting in a major adverse (significant) effect. However, the assessment included suggested mitigations, including relocating turbines from the Exclusion Area to elsewhere within Orsted's site boundary or building out fewer larger turbines. Provided mitigation was undertaken by Orsted, the effects of Orsted being unable to construct the Hornsea 4 Project within the Exclusion Area were assessed to have a residual significance of slight adverse (not significant).

This assessment will be updated, if and to the extent appropriate, in the material being prepared by the Applicants to address the request in paragraph 6 of the Secretary of State's letter, as discussed in Appendix 1.

The Applicants have set out their position in depth on where any necessary mitigations should be secured in paras. 6.2.32-48 of **REP8-049 (e-pages 22-25)**.

Further clarification on Wider NZT Project consenting and environmental assessment:

Paragraph 6.3.1 of **REP13-019 (e-pages 16-17)** lists the Applicants' submissions in the NZT DCO examination which respond to Orsted's submissions regarding the interface concern, many of which are cited in part in the above responses to paragraphs 3 – 7 of the Secretary of State's letter. Should the Secretary of State require any further clarification of this material or these responses, the Applicants would be happy to assist.

Request for further proposed change – Removal of Tees Dock Road Access

Paragraph 8 – The Applicants have no comments to make in respect of paragraph 8 of the Secretary of State's letter.

Recent Government Publications

Paragraph 9 – The Applicants have reviewed the updated draft National Policy Statements ('NPSs') and the Powering Up Britain Strategy published in March 2023.

An updated Planning Statement has been submitted that takes account of the updated draft NPSs and the Powering Up Britain Strategy.

The Applicants note that updated draft NPS EN-1 confirms that the need for the types of energy infrastructure set out in the NPS is "urgent" in contrast to the September 2021 draft, which states that the need "will often be urgent". The updated draft of EN-1 recognises the role of combustion power plants (with carbon capture) in providing dispatchable generation to complement intermittent renewables and continues to underline the importance of technologies such as carbon capture and storage in decarbonising power generation and industry in order to achieve Net Zero by 2050. It also confirms that there is "an urgent need" for new carbon capture and storage infrastructure to support the transition to a Net Zero economy.

In summary, the Applicants consider that the Proposed Development aligns with the March 2023 drafts NPS and that they do not materially alter the overall assessment of the Proposed Development. If anything, updated draft EN-1 reinforces the need for projects such as the Proposed Development to be delivered at pace.

Powering Up Britain highlights the UK's substantial offshore carbon dioxide storage potential providing substantial opportunities for growth through international trade. It states that the Government will provide up to £20 billion of funding (announced at the Spring 2023 budget) for early deployment of carbon capture and storage to unlock private investment and jobs. Furthermore, that the Government remains committed to delivering 20 to 30 mtpa of carbon dioxide storage in four operational carbon capture and storage clusters, including the East Coast Cluster, by 2030.

Powering Up Britain therefore underlines the Government's support for carbon capture and storage and projects such as the Proposed Development.

Responses to Secretary of State's Letter dated 3rd April 2023

Paragraph 10 – The Applicants would comment as follows on the responses received by the Secretary of State to his letter of 3rd April 2023:

- National Gas Transmission PLC – The Applicants have no further comment.
- Air Products (Chemicals) Teesside Limited – The Applicants acknowledge the update provided by Air Products on 13th April 2023. The Applicants confirm that progress has been made with negotiations and both parties are continuing to engage with the aim of reaching agreement prior to a decision being made by the Secretary of State.
- North Sea Midstream Partners – The Applicants have no further comment.
- Exolum Seal Sands Ltd and Exolum Riverside Ltd – The Applicants have no further comment.

In addition, the Applicants can confirm that since their response (dated 11th April 2023) to the Secretary of State's letter of 3rd April 2023, they have completed a private side agreement with Northern Powergrid. Northern Powergrid have subsequently withdrawn their objection to the DCO Application via a letter to PINS dated 30th April 2023.

Additional Information***Funding Statement***

An updated Funding Statement has been submitted to reflect changes to the partners for Net Zero North Sea Storage Limited. Appendix 1 of the Funding Statement has been updated to reflect minor changes to the bp corporate structure and Appendices 2 to 4 include updated annual accounts.

Application Guide

An updated Application Guide has been submitted to reflect the changes to the partners for Net Zero North Sea Storage Limited and to take account of the submission of the updated Funding Statement and updated Planning Statement.

I would be grateful if you could confirm receipt of this submission.

Yours sincerely



Geoff Bullock
Partner – Head of Planning
DWD – on behalf of NZT Power Limited & NZNS Storage Limited

Appendix 1 – Detailed response to paragraph 6 of the Secretary of State’s request for further information dated 16th May 2023

The Secretary of State requests that the Applicants provide an updated Environmental Impact Assessment and Habitats Regulations Assessment Report which include assessment, alone and cumulatively, of the offshore elements of the Wider NZT Project, including the use of the Endurance Store.

1. The Applicants will supply the Secretary of State with an update to the Environmental Impact Assessment and Habitats Regulations Assessment Report as requested. However additional time will be required for this information to be prepared and it is anticipated that its submission will have procedural implications that may require a short additional extension to the statutory deadline for the determination of the DCO Application.
2. The remainder of the response to paragraph 6 sets out:
 - 2.1 The Applicants’ understanding of the additional environmental information that has been requested;
 - 2.2 the format of the documentation that the Applicants intend to submit in order to comply with the request; and
 - 2.3 an explanation of the time that will be required for the Applicants to prepare the aforementioned documentation and the procedural implications.
3. To assist the Applicants in preparing the relevant documentation, the Applicants request that the Secretary of State respond in writing as soon as possible should they consider that, having regard to the content of this response:
 - 3.1 the Applicants appear to have misunderstood any aspect of the Secretary of State’s request; or
 - 3.2 the Secretary of State has concerns regarding any aspect of the proposed format, scope or level of detail in the documentation described below.
4. In addition, if either of those circumstances arise, the Applicants would be grateful if the Secretary of State could provide additional detail or clarification as to the environmental information they are requesting and/or the reason(s) for the request.

Applicants’ understanding of the additional environmental information that has been requested

5. With respect to the Proposed Development:
 - 5.1 The Applicants have already submitted an Environmental Statement [APP-081 to APP-348] (and Addendum Reports [AS-049 to AS-132], [REP6-106 to REP6-108], and [REP12-116 to REP12-119]) that assesses the likely significant effects of the Proposed Development. However, noting that the Secretary of State has asked for the assessment to be updated ahead of their determination of the DCO application, the Applicants understand that the request from the Secretary of State would encompass revisiting the conclusions of those assessments;

5.2 The Applicants have also submitted a Habitats Regulations Assessment Report [REP12-032] that confirms that the Proposed Development will not have an adverse effect on the integrity of any site protected under the Conservation of Habitats and Species Regulations 2017, either alone or in combination with other plans and projects. However the Applicants acknowledge that the Secretary of State has asked for this assessment to be updated ahead of the decision and its conclusions would therefore also be revisited;

6. With respect to the Offshore Elements:

The “Alone” Assessment

6.1 The Applicants have not submitted an Environmental Statement that assesses “alone” the Offshore Elements on the basis that these parts of the Wider NZT Project are not the subject of the DCO application. Further information on the consenting process for the Offshore Elements is set out at paragraph 7. Nevertheless, the Applicants understand that what the Secretary of State is now requesting is an assessment “alone” of the likely significant environmental effects of the Offshore Elements.

6.2 The Applicants have not submitted a Habitats Regulations Assessment (“HRA”) Report that assess “alone” the Offshore Elements for the same reasons as in the preceding paragraph. Nevertheless the Applicants understand that an HRA Report, that assesses “alone” the implications that the Offshore Elements would have on other plans and projects, is also sought by the Secretary of State.

The “Cumulative” Assessment

6.3 The Applicants have submitted a cumulative assessment of the Proposed Development and the Offshore Elements². However, noting what is stated at paragraph 6.1 and paragraph 7 below, it is acknowledged that more up to date information is available, or will shortly be available, to inform the understanding of the environmental effects of the Offshore Elements. That would also inform the preparation of an updated cumulative assessment of the Offshore Elements with the Proposed Development. The Applicants understand that this would be within the scope of the request by the Secretary of State.

6.4 The Applicants have not submitted a cumulative assessment of the Offshore Elements with other plans and projects (i.e. other than with the Proposed Development). The same principles apply as at paragraph 6.3. However the Applicants understand that a cumulative assessment of the Offshore Elements with other plans and projects is also within the scope of the current request from the Secretary of State.

The format of the documentation that the Applicants intend to submit in order to comply with the Secretary of State’s request

7. The format of the documentation that is to be provided in response to Item 6 must be considered in the context of the consenting procedures for the Offshore Elements and the work that is already being undertaken to support those applications:

7.1 The Northern Endurance Partnership (“NEP”) who are promoting the Offshore Elements are in the process of preparing the following information in support of the pipeline works

² ES Volume 1 Chapter 24 (Cumulative and Combined Effects) [APP-106] and in Appendix 24C [AS-032].

authorisation application under the Petroleum Act 1992 (the “PWA Consent”) and the application for the Store Permit to the North Sea Transition Authority for the injection of CO₂ into the Endurance Store under the Offshore EIA Regulations (the “Store Permit”)³:

- 7.1.1 an environmental and social impact assessment (“ESIA”) of the Offshore Elements under the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 (“Offshore EIA Regulations”)⁴; and
 - 7.1.2 as part of the ESIA, an assessment of the implications that the Offshore Elements would have on sites protected under the Conservation of Offshore Marine Habitats and Species Regulations 2017 (“Offshore HRA Regulations”).
- 7.2 The ESIA will encompass all of the “alone” and “cumulative” assessments described at paragraph 6.1 to 6.4.
 - 7.3 An advanced draft of the full ESIA was submitted to the Offshore Petroleum Regulator for Environment and Decommissioning (“OPRED”) for comment on 25th November 2022;
 - 7.4 NEP received comments from OPRED on the draft ESIA on 31st March 2023. The comments received from NEP addressed overarching matters as well the technical content of the ESIA.
 - 7.5 The ESIA is now being updated to address these comments and is projected to be ready for formal submission to OPRED by the end of July 2023.
 - 7.6 The ESIA will also be submitted in tandem with the Store Permit application to the North Sea Transition Authority for the injection of CO₂ into the Endurance Store by July 2023.
- 8. With the benefit of the ESIA, the Applicants expect to be in possession of all of the environmental information that it requires to respond to the Secretary of State’s request for an “alone” and “cumulative” assessment of the Offshore Elements of the Wider NZT Project. However there is a practical, not substantive, issue with respect to addressing the request for providing an “...updated Environmental Impact Assessment and Habitats Regulations Assessment Report”.
 - 9. The Applicants understand this request to envisage updated versions of the DCO ES [APP-081 to APP-348] (and addendum reports [AS-049 to AS-132, REP6-106 to REP6-108, and REP12-116 to REP12-119) and final HRA Report [REP12-032] submitted with the DCO Application. As the Secretary of State will be aware, those submissions comprise an extensive amount of information across many (several hundred) separate electronic documents. Furthermore, these are documents that interested parties will be familiar with and that have consistently followed the same structure and level of detail throughout the pre-application, submission and acceptance and Examination stages of the DCO application (and which will now be familiar to the Secretary of State, Examining Authority and Interested Parties). The same principles apply with respect to the extensive work that has already been

³ Details of the consents required for the Offshore Elements are included in Table 2.2 at pages 18 – 22 of the “Other Consents and Licences” document [REP11-004]. The Applicants have also previously described the consenting process for the Offshore Elements in Appendix 5 to Written Summary of Oral Submission for Issue Specific Hearing 1 [REP1-035].

⁴ As the Offshore Elements of the Wider NZT Project comprise shared infrastructure that is also required for the injection and storage of carbon from the Zero Carbon Humber project, the EISA assesses the entirety of the environmental effects of the transportation of CO₂ from the export pipelines from the Mean Low Water Springs from Teesside and Humberside, and the subsequent injection and storage of the CO₂ from the aforementioned sources into the Endurance Store.

undertaken on the ESIA and the subject of consultation with OPRED and subsequent work to support the forthcoming applications for the Offshore Elements.

10. The Applicants accordingly have serious concerns regarding the practicalities of preparing single “updated” EIAR and HRA Reports for the “Wider NZT Project”. that exercise is likely to take a substantial amount of time (several months) following completion of the ESIA in July 2023. Crucially however the Applicants also consider such an exercise to be entirely unnecessary given the availability of the ESIA. Furthermore, in light of what would then be a need for “root and branch” changes to the existing DCO ES (and Addendums) and HRA Reports, there is a significant risk that this could lead to considerable confusion and uncertainty amongst the stakeholders in the DCO process (not least because their submissions to date are all based on and refer to the existing material) and, in turn, unnecessary complexity in relating the content of the new EIAR and HRA Reports to the Examining Authority’s recommendation report.
11. For the foregoing reasons, the Applicants propose to submit the following documentation to address the request from the Secretary of State:
 - 11.1 The Applicants will submit the final ESIA to the Secretary of State as soon as this has been completed. NEP will in tandem be submitting the information to OPRED at this point in time. That will address all of the “alone” and “cumulative” assessments of the Offshore Elements of the Wider NZT Project which (based on the Applicants understanding) have been requested by the Secretary of State. As explained above, the scope of the EISA encompasses an assessment (both alone and cumulatively) of the environmental effects of the transportation of CO₂ from the Mean Low Water Springs on Humberside as well as Teesside, and the subsequent injection of CO₂ from both sources into the Endurance Store.
 - 11.2 The Applicants will submit an EIA and HRA Addendum that:
 - 11.2.1 Reports on the conclusions on the likely significant effects of the Wider NZT Project, as fully assessed and collectively reported upon in the DCO ES (and Addendums) and HRA Report, and the ESIA (to the extent that its findings relate to the Wider NZT Project).
 - 11.2.2 Reports on any new or materially different environmental effects (to the extent they are identified) of the Wider NZT Project (both “alone” and “cumulatively”) that have not been identified in the DCO ES (and Addendums) and HRA Report, and/or the ESIA (to the extent that its findings relate to the Wider NZT Project). That will include, but not be limited to, consideration of the environmental effects at the points of interaction between the Proposed Development and Offshore Elements. In short, this element of the EIA and HRA Addendum serves to eliminate any perceived risk that likely significant environmental effects of the Wider NZT Project “fall between the cracks” by virtue of the scope and format of the documentation that has been submitted.
 - 11.2.3 Reports on any updates to the environmental effects (“alone” and “cumulative”) of the Proposed Development in order to address the passage of time since the submission of the DCO ES (and Addendums) and HRA Report (or otherwise provides confirmation that there is no change to the effects reported on in those assessments).

12. In summary, the Applicants consider that this approach would be the most efficient and proportionate way to address the Secretary of State’s request, whilst ensuring that all of the information on the environmental effects of the Wider NZT Project has been made available to the Secretary of State. It also avoids duplication of work and the “retrofitting” of pre-existing environmental information which does not best serve the Applicants’, Interested Parties’ or the Secretary of State’s understanding of the environmental effects of the Wider NZT Project.

The timescales for the Applicants and its instructed consultants to prepare the aforementioned documentation and the procedural implications

13. The ESIA is not projected to be completed until the end of July 2023. Accordingly that is the earliest it could be submitted to the Secretary of State. However, noting the proposed content of the EIA and HRA Addendum, and to reduce the risk of confusion in any subsequent consultation, the Applicants consider that it would be prudent to submit the ESIA and ES and HRA Addendum at the same time.
14. As substantial progress has now been made with preparing the ESIA, the Applicants can now commence some work on the ES and HRA Addendum. It will not be possible, however, to verify the accuracy and completeness of all of that work, and finalise the ES and HRA Addendum, until the ESIA has been completed.
15. Taking into account these considerations and based on their initial discussions with instructed environmental consultants, the Applicants estimate that the ESIA and ES and HRA Addendum could be submitted to the Secretary of State by August 2023.
16. The Applicants anticipate that the submission will constitute “further information” that is directly relevant to the Secretary of State reaching a reasoned conclusion on the significant effects of the development⁵. Accordingly we assume the new documentation will be subject to additional consultation with Interested Parties and those consultation responses will require due consideration by the Secretary of State before their determination of the DCO Application.
17. The scope of any further consultation, and the timescales for completing that exercise and making a decision, are ultimately matters for the Secretary of State.
18. Depending on the Secretary of State’s assessment of those matters, an extension to the statutory deadline for the determination of the DCO Application may be required to accommodate the Secretary of State’s request at paragraph 6.
19. The Applicants would be happy to address any additional matters that the Secretary of State considers relevant in light of this response.

⁵ Regulation 3(1) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

APPENDIX 2 OFFSHORE ENVIRONMENTAL STATEMENT

Enclosed in this Appendix 2 is the Offshore Environmental Statement that will be submitted to OPRED as part of the process of securing approval for the Offshore Elements from the NSTA