HABITATS REGULATIONS ASSESSMENT FOR AN APPLICATION UNDER THE PLANNING ACT 2008

The Associated British Ports (Immingham Eastern Ro-Ro Terminal)

04/10/2024

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1. INTRODUCTION

Background

1.1 This document ("the HRA Report") is a record of the Habitats Regulations Assessment ("HRA") that the Secretary of State for Transport has undertaken under regulation 63 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations") in respect of the Proposed Development Consent Order ("DCO"), for the proposed Immingham Eastern Ro-Ro Terminal' ("the Proposed Development"). The HRA Report includes an appropriate assessment for the purposes of regulation 63 of the Habitats Regulations.

1.2 The Habitats Regulations were amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 ("the 2019 Regulations") and the amendments were taken into account in the preparation of this HRA Report. Reference to the Habitats Regulations in this HRA Report are therefore to the latest amended version, unless otherwise stated.

1.3 Associated British Ports ("the Applicant") submitted an application for development consent ("the Application") to the Planning Inspectorate ("the Inspectorate") which was received in full on 10 February 2023. The application was made under section 37 of the Planning Act 2008 ("PA 2008") [ER Overview]. The Proposed Development to which the Application relates is described in more detail in Section 2 of this HRA Report.

1.4 The Proposed Development would alter the Port of Immingham ("PoI") by increasing the number of ship berths and has been designed to increase the port's handling capacity "…*by at least*…" 250,000 units for embarkation or disembarkation per year. Section 24(6) of the PA 2008 defines a unit as being "…*any item of wheeled cargo (whether or not self-propelled)*…" that can be transported by a Ro-Ro ship. The Proposed Development therefore falls within section 24(2) of the PA 2008 and meets a definition for being a Nationally Significant Infrastructure Project stated in section 14(1) of the PA 2008. The Proposed Development therefore requires development consent in accordance with section 31 of the PA 2008 [ER 1.1.3].

1.5 The Application was accepted for Examination by the Inspectorate (under the delegated authority of the Secretary of State) under section 55 of the PA 2008 on 6 March 2023 [ER 1.1.1]. The Examination began on 26 July 2023 and concluded on 25 January 2024 [ER 1.4.2].

1.6 The Examining Authority ("the ExA") submitted the report of the Examination, including its recommendation ("the Recommendation Report") to the Secretary of State for Transport on 25 April 2024.

1.7 The Secretary of State's conclusions in relation to European sites have been informed by the Recommendation Report, documents and representation submitted during the Examination, late representations and responses to the Secretary of State's requests for comments and further information issued on 9 May 2024 and 9 July 2024, insofar as these have any bearing on the effects of the Proposed Development on European sites.

Habitats Regulations Assessment ("HRA")

1.8 The Habitats Regulations contain the relevant provisions for the protection of European sites. This is the broad term which is used to refer to Special Areas of Conservation ("SAC") and Special Protection Areas ("SPA"). SACs are designated for their habitat features and populations of non-avian species. SPAs are designated for their bird populations. These sites form the National Site Network ("NSN") which includes all SACs and SPAs currently designated and new SACs and SPAs designated under the Habitats Regulations (as defined in regulation 8).

1.9 The UK Government is also a signatory to the Convention on Wetlands of International Importance 1972 ("the Ramsar Convention"). The Ramsar Convention provides for the listing of wetlands of international importance. Ramsar sites do not form part of the NSN, but all Ramsar sites are treated in the same way as SACs/SPA as a matter of Government policy[1].

1.10 For the purposes of this HRA Report, in line with the Habitats Regulations and relevant Government policy, the term "European sites" includes SAC, candidate SACs ("cSAC"), possible SACs ("pSAC"), SPA, potential SPAs ("pSPA"), Sites of Community Importance ("SCI"), listed and proposed Ramsar sites and sites identified or required as compensatory measures for adverse effects on any of these sites.

1.11 Regulation 63(1) of the Habitats Regulations requires that:

"*(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which-*

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives…"

1.12 Regulation 64(1) goes on to state that:

"*(1) If the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site (as the case may be).*"

1.13 Additionally, regulation 68 states that:

[1] Paragraphs 185 and 187 of the National Planning Policy Framework, December 2023.

"*Where in accordance with regulation 64—*

(a) a plan or project is agreed to, notwithstanding a negative assessment of the implications for a European site or a European offshore marine site, or

(b) a decision, or a consent, permission or other authorisation, is affirmed on review, notwithstanding such an assessment, the appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of Natura 2000 is protected."

1.14 The Proposed Development is not connected with or necessary to the management of any European sites. Accordingly, the Secretary of State for Transport, as the competent authority for the purposes of Transport Nationally Significant Infrastructure Projects under the PA 2008, has undertaken an assessment in line with the requirements of the Habitats Regulations. This HRA Report (Sections 1 to 5) is the record of the appropriate assessment for the purposes of regulation 63 of the Habitats Regulations.

The Report on the Implications for European Sites (RIES) and consultation with the appropriate nature conservation body

1.15 The ExA, with support from the Inspectorate's Environmental Services Team, produced a Report on the Implications for European Sites ("the RIES"). The purpose of the RIES was to compile, document and signpost information submitted by the Applicant and Interested Parties ("IPs") during the Examination up to and including Deadline 5 of the Examination (23 October 2023). The RIES was issued to set out the ExA's understanding on HRA-relevant information and the position of IPs, including Natural England ("NE"), in relation to the effects of the Proposed Development on European sites at that point in time. The consultation on the REIS ran between 15 November 2023 and 11 December 2023 (Deadline 7).

1.16 The Applicant and NE submitted their comments on the REIS at Deadline 7 (11 December 2023) and the Applicant responded further to NE's REIS comments at Deadline 8 (8 January 2024). These comments were taken into account in producing the ExA's HRA assessment [contained in Appendix C]. No other IPs responded [ER Appendix C 1.1.7].

1.17 Regulation 63(3) of the Habitats Regulations requires competent authorities (in this case the Secretary of State), if they undertake an appropriate assessment, to consult the appropriate nature conservation body and have regard to any representations made by that body. The Secretary of State is satisfied that NE, as the appropriate nature conservation body in respect of the Application for the Proposed Development, had been formally consulted on Habitats Regulations matters during the Examination [ER 4.1.3].

Changes to the Application during Examination

1.18 The Applicant submitted four change requests during the Examination, as set out in Section 1.5 and Table A2 (Appendix A) of the ExA's Recommendation Report:

- Change 1 – the realignment of the approach jetty and associated works to the marine infrastructure.
- Change 2 – the realignment and shortening of the Proposed Development's onshore internal bridge.
- Change 3 – the rearrangement of the UK Border Force facilities.
- Change 4 – the potential installation of a 'dolphin' structure, as an impact protection measure at the western end of the Immingham Oil Terminal finger pier.

1.19 A procedural decision was issued by the ExA explaining that the proposed changes either individually or collectively were not so substantial as to constitute a materially new project [ER Appendix C 1.1.15].

1.20 NE confirmed that change requests 1 and 2 would not alter the assessment of impact significance made for the original submitted application. It made no comments in relation to change requests 3 and 4 [ER Appendix C 1.1.16].

Documents referred to in this HRA Report

1.21 This HRA Report has taken account of and should be read in conjunction with the documents produced as part of the application and Examination, together with the responses to the Secretary of State's request for comment and further information dated 9 May 2024 and 9 July 2024.

1.22 The Applicant provided a report entitled 'Habitats Regulations Assessment' ("the Applicant's HRA report") with the DCO application. The same report was submitted in duplicate as an appendix to the Environmental Statement. This report was revised four times during the Examination with the final fourth version being submitted at Deadline 8 (8 January 2024). The revisions to the Applicant's HRA Report were made to address questions from the ExA and issues raised by IPs. Unless otherwise stated, subsequent references to the Applicant's HRA Report in this report refer to the fourth version submitted at Deadline 8 [ER Appendix C 1.1.12]. At Deadline 8 the Applicant also provided a without prejudice Habitats Regulations Derogations Report ("the Derogation Report") at the request of the ExA [ER Appendix C 1.1.13].

1.23 The documents relied on in the preparation of this report are listed in Annex 1 of this HRA Report.

Structure of this HRA Report

1.24 The remainder of this HRA Report is presented as follows:

- Section 2 provides a general description of the Proposed Development.
- Section 3 describes the location of the Proposed Development and its relationship with European sites.

- Section 4 identifies the European sites and qualifying features subject to likely significant effects, alone or in-combination with other plans or project (HRA Stage 1).

- Section 5 considers adverse effects on the integrity of European sites, alone or in-combination with other plans or projects and summarises the Secretary of State's appropriate assessment and conclusions (HRA Stage 2).

- Section 6 summarises the Secretary of State's conclusion in respect of HRA Stages 1 to 2.

2. DEVELOPMENT DESCRIPTION

2.1 The Proposed Development is described in detail in section 2.3 of Chapter 2: Proposed Development (APP-038) of the Applicant's Environmental Statement ("the ES") submitted as part of the Application (10 February 2023). The Applicant's submitted change request of 29 November 2023 Chapter 2: Proposed Development (AS-063) describes the alterations in full and was examined by the ExA and summarised in its Recommendation Report (section 1.5). The Secretary of State has summarised below the description of the works including the alterations described in the change request as follows.

2.2 The Proposed Development consists of the establishment of a new Ro-Ro terminal, located on the eastern side of the PoI. The Proposed Development would consist of three new in river berths and landside 'associated development' comprising: open storage divided into four areas (northern, southern, central and western); a terminal building; and facilities for UK Border Force [ER 1.3.13]. Works are separated in Marine works (Works 1 to 3 in the draft DCO) and landside elements of the works comprising Work Number 4 to 13 within the draft DCO, and are listed below:

Marine elements of the Proposed Development

The marine elements of the Proposed Development would comprise [ER 1.3.15]:

- An approach jetty 250m long, ranging in width between 12.5m to 17m, and a 90m long and 10m wide linkspan providing two way vehicular access to a pair of floating pontoons at the head of the proposed berths. With the exception of a crossing of the river wall, the approach jetty would be up to 13.5m above Chart Datum and would be supported by up to 46 piles with a diameter of 1.422m.
- Two finger piers, orientated east/west, attached to the floating pontoons. The pontoons would be up to 90m and 40m wide and would be held in position by piled restraint 'dolphins'. The finger piers would have a maximum length of 270m and would generally be 6.0m wide, each supported by up to 56 piles of up to 1.422m in diameter. The northernmost finger pier (furthest from the shoreline) would accommodate proposed berths 1 and 2, while the southern pier would accommodate proposed berth 3. The proposed northern pontoon, at its closest point, would be around 100 metres from the southern side of the Immingham Oil Terminal ("IOT") finger pier. At its closest, the western extremity of the southern pier would be around 225m from a tug berth that lies at the south-eastern extremity of the Eastern Jetty.
- Vessel impact protection measures (IPM) for the IOT infrastructure will take the form of:
    - A 160m linear structure adjacent to the IOT trunkway to the south of the IOT finger pier. This IPM would consist of a concrete beam supported by up to 20 piles (up to 1.52m diameter). Fendering would be attached to this IPM's outer (western) face.
    - A piled 'dolphin' structure sited at the western extremity of the IOT finger pier, which would be 30m long and 14m wide and would be supported by

12 piles with a diameter of 1.52m. There would be a separation of 5m between the proposed dolphin and the western end of the IOT finger pier. Additionally, one pile would be installed adjacent to each corner of the dolphin and those piles would act as fendering for this IPM.

- To facilitate the installation and operation of the proposed berths it would be necessary to undertake a capital dredge to create a new berth pocket with a maximum spatial extent of 70,000 square metres (m^2) and a depth varying between 1.1 and 9.0 metres above Chart Datum. The Applicant has estimated that the capital dredge would give rise to 190,000 cubic metres (m^3) of dredgings for disposal at two nearby licenced dredging disposal sites (Holme Channel (HU056) and Clay Huts (HU060)). Consent for the capital dredge is sought under Work Number 2 of the draft DCO [ER 1.3.17].

Landside elements of the Proposed Development

2.3 The container and trailer storage areas and vehicle waiting areas associated with the Proposed Development would utilise existing open storage areas that would be upgraded through the undertaking hard surfacing works. The main elements of the landside works would comprise [ER 1.3.20]:

- The northern storage area would have an area of 4.0 hectares (ha) and would accommodate: 266 trailer bays; 65 container (40 foot) ground slots; and 19 'trade unit' slots.
- The central storage area would have an area of 3.56 ha and would accommodate: 211 trailer bays; 75 staff parking spaces; and 15 equipment parking spaces.
- The southern storage area would occupy an area of 11 ha and would accommodate: 397 trailer bays; 6 trade unit ground slots; 50 pre-gate HGV parking spaces; and some parking for passengers and staff. Within the southern storage area provision would also be made for tug parking and holding/marshalling lanes for accompanied units and passenger vehicles.
- The western storage area would have an area of 9.6 ha and would accommodate 800 trailer bays.
- The proposed two-lane internal bridge would have a deck measuring 86m by 12m and its maximum height above the existing ground level would be 11m. This bridge would span an internal port road (Robinson Road). The installation of this bridge requires the demolition of four buildings and the partial demolition of a fifth building. It is proposed that the occupiers of the demolished buildings will be relocated to replacement buildings.
- To facilitate access to the new Ro-Ro terminal it is proposed that the PoI's East Gate would be altered to provide two lanes of entry through the widening of the existing entrance road by four metres and the installation of a replacement gate house. The adjoining public highway (Queens Road) would be altered by relocating a bus stop, removing a lay-by and the installation of a new length of footway.

- Some alterations to two internal port roads, Robinson Road and Gresley Way, have also been proposed to assist with the Proposed Development's assimilation within the existing port infrastructure.
- The Application includes some environmental enhancement works. Those works relate to a 1.2 ha woodland, known as Long Wood, which is situated to the south of Laporte Road (east of East Gate). These works would take the form of woodland management intended to increase the biodiversity of Long Wood. The Applicant has submitted that the management of Long Wood would neither mitigate not compensate for any effects the Proposed Development might have on the SAC, SPA or Ramsar site.

Construction and operational phases

2.4 Summaries for the phases of the Proposed Development are set out below and are provided in full within Chapter 3 of the ES. (AS-065) [ER 1.3.21].

Construction phase

2.5 The preferred scenario by the Applicant would involve constructing the marine and landside works concurrently over a period of 18 months [ER 1.3.22].

2.6 The alternative scenario would involve a sequenced construction period, starting with the constructions of the northern finger pier (proposed berths 1 and 2) and the northern, central and southern storage areas and the undertaking of those works would take around 18 months. Thereafter the construction of the southern finger pier (berth 3) would be undertaken while proposed berths1 and 2 were being operated and the construction of the western storage area would also be undertaken ER 1.3.23].

2.7 The landside construction works would be undertaken between 07:00 and 19:00 hours Monday to Friday and between 07:00 and 13:00 on Saturdays. The marine works would be undertaken on a 24-hour basis, seven days a week, subject to seasonal restrictions intended to safeguard the wellbeing of the qualifying features of the SAC, SPA and Ramsar site [ER 1.3.24].

Operational phase

2.8 Other than Christmas Day it is intended that the Proposed Development would operate 24 hours a day, seven days a week, operated by Stena Line [ER 1.3.25].

2.9 The Applicant expects that all units handled at the Proposed Development would arrive and depart the PoI by road, with there being no use of the rail network [ER 1.3.28].

2.10 The design of the Proposed Development has been designed to facilitate the handling of Ro-Ro units as well as up to 100 embarking (departing) passengers a day. No limit has been set for disembarking passengers because it is expected they would only remain within the PoI for as long as it took for border controls to be completed [ER 1.3.29].

Decommissioning

2.11 The Applicant's HRA does not assess impacts that may arise as part of the decommissioning stage as the Proposed Development is intended to *'become part of the fabric of the PoI'* and will be maintained on a long-term basis (paragraph 1.2.8 of REP8-014). The Secretary of State is content that decommissioning was not assessed for the reasons set out.

2.12 The potential effects on European sites associated with the construction, and operation of the Proposed Development are addressed in Section 4 of this HRA Report.

3. LOCATION OF THE PROPOSED DEVELOPMENT AND RELATIONSHIP WITH EUROPEAN SITES

Location and existing land use

3.1 The Proposed Development is within the PoI and wholly located in the administrative boundary of North East Lincolnshire Council (NELC). While most of the PoI is within NELC administrative area parts of the port to the west beyond the Order Limits are within the North Lincolnshire Council administrative area [ER 1.3.1].

3.2 The Proposed Development includes both the marine and landside parts of the development. An area of woodland is also present to the east of the Proposed Development, outside of the PoI. The PoI comprises (enclosed) inner docks and an outer riverside port area, with the statutory port estate occupying 480 hectares. The outer port area consists of a number of jetties or piers with direct access to and from the river Humber that variously handle bulk commodities and Ro-Ro freight. The landside PoI comprises open yards used for the storage and handling of containers, trailers, bulk commodities and vehicles, warehouses and tank farms. The PoI is the UK's largest port by tonnage, handling around 46 million tonnes annually [ER 1.3.2 to 1.3.6].

3.3 On the eastern extremities of the outer port there are marine elements of the IOT which has [ER 1.3.9]:

- an in-river jetty with three berths (numbered 1, 2 and 3);
- a finger pier with four berths (numbered 6, 7, 8 and 9) for use by coastal tankers and bunker (refuelling) barges; and
- a pipeline trunkway.

3.4 The IOT handles petroleum products and serves the Humber Refinery and the Lindsey Refinery; both of which are located outside of and north west of the PoI. Together they account for approximately 27% of the UK's refining capacity [ER 1.3.9].

3.5 The town of Immingham lies to the southwest of the PoI and is largely residential in nature, apart from its northern fringes which are industrial and immediately adjoin the port [ER 1.3.10].

3.6 Vehicle access into and out of PoI is via the East Gate or the West Gate. The A1173 is the primary route to the East Gate while the West Gate is accessed through the A160 or the A1173. Both the A160 and A1173 connect to the A180 which further west becomes the M180. The PoI is connected to the national rail network through an internal rail network that is under the control of the Applicant [ER 1.3.11].

European sites potentially affected by the Proposed Development

3.7 The Proposed Development is not directly connected with or necessary to the management of any European sites considered in the Applicant's HRA Report [ER C.1.1.11].

3.8 The Applicant considered the potential for likely significant effects (LSE) on the following four European sites in its first HRA Report (APP-115) [ER 1.9.2]:

- Humber Estuary SAC;
- Humber Estuary SPA;
- Humber Estuary Ramsar; and
- Greater Wash SPA.

3.9 The Wash and North Norfolk Coast SAC was not included for screening in the Applicant's first HRA Report. Following NE advice that the harbour [common] seal qualifying species feature is known to be present within the zones of impact of the Proposed Development, that the project is within its known foraging range and that individuals found in the study area are highly likely to be connected to this SAC. NE also acknowledged that it had not raised the inclusion of this SAC previously but on review advised on its inclusion (AS-015, issue 34, page 55). The Applicant's Second HRA Report (REP5-020) was amended to reflect this. No IPs raised further concerns about the scope of the European sites considered or their qualifying features following this [ER Appendix C 1.2.4].

3.10 Figures showing the European sites identified in the Applicant's assessment are provided in Section 3 of the Applicant's HRA Report and reproduced below as Figure 1. Table 1 presents the proximity of the sites to the Proposed Development (taken from Table 2.1 of the RIES, with the addition of The Wash and North Norfolk Coast SAC).

Table 1 European sites screened into the Applicant's assessment

Name of European Site	Distance from the Proposed Development
Humber Estuary SAC	Within the Order Limits
Humber Estuary SPA	Within the Order Limits
Humber Estuary Ramsar	Within the Order Limits
Greater Wash SPA	20 km
The Wash and North Norfolk Coast SAC	75 km

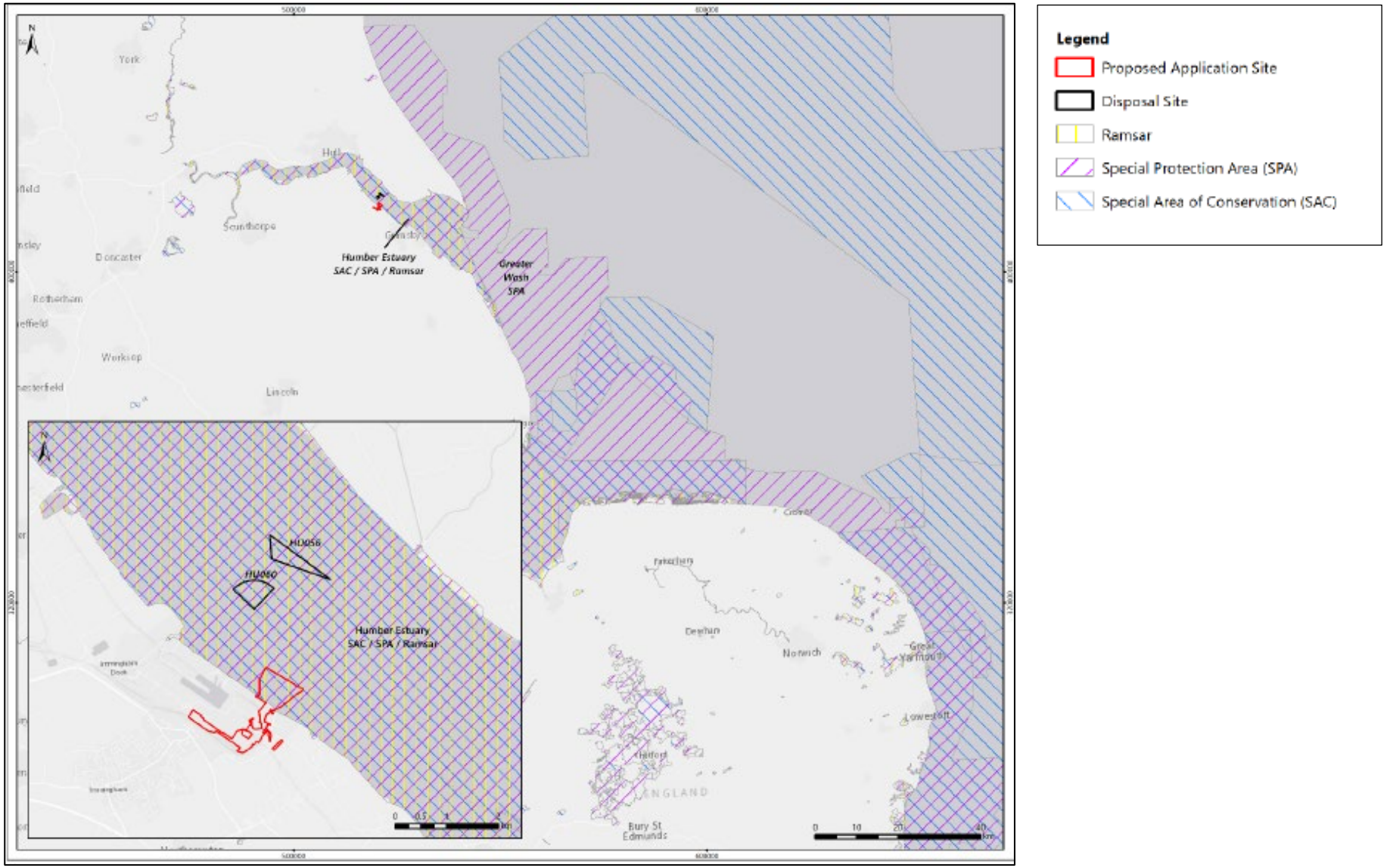
3.11 The Applicant's approach to identifying relevant European sites is explained in paragraph 3.1.3 of its HRA Report: '*The judgement as to whether a site or feature needs to be considered is based on the available baseline information of the location, ecology and/or behaviour of interest features*...' [provided in the Nature Conservation and Marine Ecology Chapter 9 of the ES (Application Document Reference number 8.2.9)] '...*and the detailed description of the proposed development provided in Chapter 2 of the ES (Application Document Reference number 8.2.2), and the activities involved during the construction and operational phase of the proposed development included in Chapter 3 of the ES (Application Document Reference number 8.2.3)*'. Consultation responses from NE (AS-015) were also factored into the screening criteria, and therefore The Wash and North Norfolk Coast SAC was considered at Stage 1: Screening.

3.12 The Secretary of State is content that the pathways that could lead to effects on European sites from the Proposed Development had been considered by the ExA [ER 4.4.10].

3.13 The Secretary of State notes that transboundary screening under regulation 32 of the Environmental Impacts Assessment Regulations was undertaken following the Applicant's request for a scoping opinion. No significant effects were identified on the environment in a European Economic Area (EEA) member state. Regulation 32 is an ongoing duty and on that basis the Secretary of State further notes that the ExA considered whether any facts had emerged to change these screening conclusions up to the close of Examination (25 January 2024). The ExA was content that on the basis of the information provided by the Applicant and NE's agreement that the correct sites had been considered in the HRA and that the Proposed Development would not have any LSE on European sites in any EEA States [ER 2.8.1 to 2.8.3].

3.14 The Secretary of State agrees with the conclusion reached by the ExA and she is satisfied that the Proposed Development would not have any LSE on European sites in any EEA states.

Figure 1 Location of the Proposed Development in relation to European sites potentially affected.



4. STAGE 1: ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS (LSE)

Potential effects from the Proposed Development

4.1 The Applicant's approach to identifying relevant European sites was explained in paragraph 3.1.3 of the Applicant's HRA: *'The judgement as to whether a site or feature needs to be considered is based on the available baseline information of the location, ecology and/or behaviour of interest features…'* [provided in the Nature Conservation and Marine Ecology Chapter 9 of the ES (Application Document Reference number 8.2.9)] '…*and the detailed description of the proposed development provided in Chapter 2 of the ES (Application Document Reference number 8.2.2), and the activities involved during the construction and operational phase of the proposed development included in Chapter 3 of the ES (Application Document Reference number 8.2.3)*'. Consultation responses from NE (AS-015) were also factored into the screening criteria, and therefore The Wash and North Norfolk Coast SAC was considered at Stage 1: Screening.

4.2 The Applicant in its HRA Report (paragraph 1.3.8) that it considered the ruling of the European Court of Justice ("ECJ") in *People Over Wind, Peter Sweetman v Coillte Teoranta* (C-323/17) ("the People Over Wind judgment") in its assessment of LSE. In this HRA Report, the Secretary of State has also had due regard to the ruling of the ECJ in *Landelijke Vereniging tot Behoud van de Waddenzee v Staatssecretaris van Landbouw* (C-127/02) ("the Waddenzee judgement").

4.3 The Secretary of State had reviewed the information within the Examining Authority's report and the final version of the Applicant's HRA (REP8-014) to summarise the impact pathways identified and the LSEs on the relevant qualifying features of the four European designated sites screened below in Table 2.

4.4 The Applicant screened out the Greater Wash SPA within Table 2 of the initial HRA report and identified no pathways to be screened in at Stage 1 screening that could have any LSE on the qualifying features of the SPA. The Applicant had concluded no LSE would occur from the Proposed Development either alone or in combination with any plans or projects, a conclusion that NE confirmed it agreed with [ER Appendix C 1.2.27]. The Secretary of State is satisfied with this conclusion of no LSE in respect of the Greater Wash SPA.

4.5 The second HRA report (REP5-020) included the addition of The Wash and North Norfolk Coast SAC. The only qualifying feature considered for the screening assessment for The Wash and North Norfolk Coast SAC was Harbour [common] seal (*Phoca vitulina*). All other qualifying (habitat) features were not considered for screening as the SAC is over 75 km from the Proposed Development, and so there was no potential for LSE. The Secretary of State agrees with this approach, and only considers Harbour [common] seal in the screening below in relation to The Wash and North Norfolk Coast SAC.

4.6 The Proposed Development falls within the footprint of the Humber Estuary SAC, SPA and Ramsar site. Table 2 below summarises the screening exercise presented

in the last HRA report (REP8-014, Tables 3, 4 and 5). Tables 3, 4 and 5 of the last HRA report includes all habitats, pathways and clarifications requested throughout the examination. NE confirmed that they were content with the Applicant's assessment of the pathways and LSE conclusions [ER Appendix C 1.2.7 to 1.2.11]. The Secretary of State is content that the list in Table 2 includes all the sites and qualifying features which should be considered.

Table 2 European sites and qualifying features considered in the Applicant's screening

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
Humber Estuary SAC: • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Sandbanks which are slightly covered by sea water all the time • Coastal lagoons • Salicornia and other annuals colonizing mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes") • Fixed coastal dunes with herbaceous vegetation ("grey dunes") * Priority feature • Dunes with *Hippophaë rhamnoides* • Sea Lamprey	Direct loss of intertidal habitat	Construction (as a result of capital dredging	Piling will result in the small loss of subtidal habitat	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Criterion 1 – natural wetland habitats that are of international importance
	Direct loss of subtidal habitat	Construction (as a result of the piles)	Direct impacts on marine sediments result in direct impacts on benthic fauna including changes to abundance, damage, mortality and relocation to the disposal site	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Criterion 1 – natural wetland habitats that are of international importance
	Direct changes to benthic habitats and species	Construction (as a result of seabed removal during dredging)	Capital dredging and dredge disposal will result in the physical disturbance and smothering of seabed habitats and species. Impacts of sediment deposition through piling have been ruled out due to the negligible and localised resuspension of sediment during this activity.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Criterion 1 – natural wetland habitats that are of international importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
• River Lamprey • Grey seal **Humber Estuary SPA:** • Avocet • Bittern • Hen harrier • Golden plover • Bar-tailed godwit • Ruff • Bittern • Marash harrier • Avocet • Little tern • Shelduck • Knot • Dunlin	Direct changes to benthic habitats and species as a result of sediment deposition	Construction (as a result of capital dredging and dredge disposal)	The marine works (capital dredging and piles) as well as the dredge disposal have the potential to result in changes to hydrodynamic and sedimentary processes including flow rates, accretion and erosion patterns. Marine invertebrates inhabiting the sand and mud habitat show different tolerance ranges to physiological stresses, and so the changes caused by the works could affect the quality of marine habitats and distribution of marine species.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1 – natural wetland habitats that are of international importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
• Black-tailed godwit • Redshank • Waterbird assemblage **Humber Estuary Ramsar:** • Ramsar Criterion 1: Natural wetland habitats that are of international importance • Criterion 3: Colony of grey seals • Criterion 5: Wintering waterfowl assemblage of international importance • Criterion 6: species of international importance: - Eurasian golden plover - Red knot - Dunlin - Black-tailed godwit - Common redshank - Common shelduck - Bar-tailed godwit	Indirect loss or change to seabed habitats and species as a result of changes to hydrodynamic and sedimentary processes	Construction (as a result of capital dredging, piling and dredge disposal)	The marine works have the potential to result in changes to hydrodynamic and sedimentary processes (e.g., flow rates, accretion and erosion patterns). Marine invertebrates inhabiting sand and mud habitat show different tolerance ranges to physiological stresses caused by tidal exposure and tidal elevation and, therefore, hydrodynamic and bathymetric changes caused by the dredging could affect the quality of marine habitats and change the distribution of marine species. Although the changes in hydrodynamic and sedimentary processes may be negligible compared to baseline sedimentary activity within the estuary, a pathway for LSE exists due to the marine works.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time Criterion 1 – natural wetland habitats that are of international importance • Waterbird assemblage of international importance • Criterion 5 (wintering waterfowl) • Criterion 6 (bird species occurring at levels of international Importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
• Criterion 8: Important migration route for river lamprey and sea lamprey **The Wash and North Norfolk Coast SAC:** • Harbour [common] seal	Changes in water and sediment quality on benthic habitats and species	Construction (as a result of capital dredging, piling and dredge disposal)	Maintenance dredging causes direct impacts to marine sediments, causing changes in water and sediment quality with direct impacts to benthic fauna and associated habitats. As a result, LSE cannot be ruled out. Temporary and localised impacts to habitats from piling will be negligible and so LSE can be ruled out due to this phase of construction.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1 – natural wetland habitats that are of international importance
	The potential introduction and spread of non-native species	Construction (as a result of capital dredging and dredge disposal)	Non-native species have the potential to be transported into the local area during the construction phase of the Proposed Development	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1- natural wetland habitats that are of international importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Changes in water and sediment quality on migratory fish species	Construction as a result of capital dredging and dredge disposal	The mobile nature of fish species allows them to utilise nearby alternative areas during temporary piling works. Although the works have the potential to result in the smothering of seabed habitats, qualifying fish species do not utilise the area subject to capital dredging for spawning grounds (which are upstream in freshwater). As the footprint of the dredging only utilises a small proportion of the ranges of lamprey, it is thought that they will be able to utilise available alternative habitat away from the dredging footprint. LSE can therefore be ruled out.	No

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Direct loss or changes to migratory fish habitat	Construction (as a result of piling, capital dredge and dredge disposal)	The mobile nature of fish species allows them to utilise nearby alternative areas during temporary piling works. Although the works have the potential to result in the smothering of seabed habitats, qualifying fish species do not utilise the area subject to capital dredging for spawning grounds (which are upstream in freshwater). As the footprint of the dredging only utilises a small proportion of the ranges of lamprey, it is thought that they will be able to utilise available alternative habitat away from the dredging footprint. LSE can therefore be ruled out.	No
	Underwater noise effects on migratory fish species	Construction (as a result of capital dredging, piling and dredge disposal)	Underwater noise and vibration levels caused by the movement of the dredger to and from the disposal site and from percussive impact (from vibro piling) could potentially affect migratory fish due to underwater noise being above baseline level during these phases, leading to behavioural changes.	Yes, in relation to: • Sea lamprey • River lamprey • Criterion 8 – Internationally important source of food for fishes, spawning grounds, nursery

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Direct changes to benthic habitats and species beneath marine infrastructure	Operation (due to shading)	Marine infrastructure has the potential to cause changes in sunlight levels on a benthic community due to shading.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1- natural wetland habitats that are of international importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Changes to intertidal habitats and species	Operation (due to the movement of Ro-Ro vessels)	There is the potential for physical disturbance to the foreshore as a result of the movement of Ro-Ro vessels using the berths.	Yes, in relation to: • Avocet • Bittern • Hen harrier • Golden plover • Bar-tailed godwit • Ruff • Bittern • Marash harrier • Avocet • Little tern • Shelduck • Knot • Dunlin • Black-tailed godwit • Redshank • Waterbird assemblage of international importance • Criterion 5 (wintering waterfowl) • Criterion 6 (bird species occurring at levels of international Importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Changes to benthic habitats and species	Construction (as a result of seabed removal during maintenance dredging)	Maintenance dredging causes direct impacts to marine sediments with direct impacts to benthic fauna and associated habitats, and so LSE can not be ruled out. Temporary and localised impacts to habitats from piling will be negligible and so LSE can be ruled out due to this phase of construction.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1 – natural wetland habitats that are of international importance
	Direct changes to benthic habitats and species as a result of sediment deposition	Construction (as a result of seabed removal during maintenance dredging)	Capital dredging and dredge disposal will result in the deposition of sediments which has the potential to cause physical disturbance and smothering of seabed habitats. Temporary and localised impacts from piling will have a negligible impact on benthic habitats due to sediment deposition and so LSE can be ruled out.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1 – natural wetland habitats that are of international importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Non-native species transfer	Operation (vessel movements)	Non-native species have the potential to be transported into the area by vessels during operation.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1 – natural wetland habitats that are of international importance
	Physical change to habitats resulting from the deposition of airborne pollutants (NOx and N deposition)	Operation and construction dust emissions	Although most SAC habitats are marine in nature and therefore not sensitive to N or NOx deposition during operation, Chapter 13 of the ES, the annual mean N and NOx deposition exceeds 1% of the Critical Load screening threshold at three of the SAC receptors. Likely significant effects therefore cannot be ruled out.	Yes, in relation to: • Atlantic salt meadows • Mudflats and sandflats not covered by seawater at low tides • Criterion 1 – natural wetland habitats that are of international importance
	Underwater noise effects on migratory fish	Operation (as a result of vessel movements)	Elevated underwater noise and vibration levels caused by the action of the dredger could potentially affect migratory fish.	• Sea Lamprey • River Lamprey

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Underwater noise effects on marine mammals	Operation (resulting from maintenance dredge and maintenance dredge disposal) Construction: dredging and dredge disposal	There is the potential for disturbance effects through noise and vibration from the operation of vessels, creating a pathway for LSE.	Yes, in relation to: • Grey seal • Harbour seal
	Direct loss or changes in marine mammal foraging habitat	Construction (piling, dredging, dredge disposal). Operation	Although the construction works will have direct impacts on mammal foraging habitat, the footprint of the Proposed Development covers a negligible fraction of the known ranges of local marine mammal populations, and therefore LSE can be ruled out.	No
	Lighting effects on migratory fish and seals	Construction and operation	Lighting is required for safety and operational purposes. It is not thought that the lighting required will penetrate far into the water column given the high turbidity of the Humber Estuary, and seals and lamprey are not sensitive to foraging in artificially lit areas. As a result, LSE as a result of lighting from the Proposed Development have been ruled out.	No

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Visual disturbance of hauled out seals	Operation: vessel operations, maintenance dredge and dredge disposal	The nearest established grey seal breeding colony is over 25 km away from the Proposed Development. During benthic surveys, the Applicant recorded the presence of 10 to 15 grey seals hauled out 4 km north east of the Proposed Development, and none have been sighted closer to the site. As a result, visual disturbance effects have been scoped out of this assessment.	No
	Collision risk to marine mammals	Operation: vessel operations	Vessels operating the berths will be moving at slow speeds, and given the high existing baseline levels of traffic within the Humber Estuary, mammals will be habituated to operating within this high traffic area and therefore risks of collision as a result of operation of the proposed Development can be ruled out.	No

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Changes in water and sediment quality on marine mammals	Construction (piling, capital dredge, dredge disposal)	The extent of sediment dispersal is not expected to cause significant elevations in water column contamination, and will only impact a negligible amount of marine mammal habitat. Further, water quality changes as a result of accidental spillages will also be negligible due to the adherence of industry guidance and protocols. As a result, this impact pathway will not result in LSE on the qualifying mammal features.	No

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Direct loss or change to supporting intertidal habitat	Construction as a result of piling and capital dredging	Capital dredging and piling will cause direct – although small – loss of intertidal habitat.	Yes, in relation to: • Avocet • Bittern • Hen harrier • Golden plover • Bar-tailed godwit • Ruff • Bittern • Marash harrier • Avocet • Little tern • Shelduck • Knot • Dunlin • Black-tailed godwit • Redshank • Waterbird assemblage of international importance • Criterion 5 (wintering waterfowl) • Criterion 6 (bird species occurring at levels of international Importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Indirect loss of supporting intertidal habitat as a result of changes to hydrodynamic and sedimentary processes	Construction (as a result of piling and capital dredging)	The marine works (capital dredging and piles) as well as the dredge disposal have the potential to result in changes to hydrodynamic and sedimentary processes including flow rates, accretion and erosion patterns. Marine invertebrates inhabiting the sand and mud habitat show different tolerance ranges to physiological stresses, and so the changes caused by the works could affect the quality of marine habitats and distribution of marine species.	Yes, in relation to: • Estuaries • Mudflats and sandflats not covered by seawater at low tides • Sandbanks which are slightly covered by sea water all the time • Criterion 1 – natural wetland habitats that are of international importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Noise and visual disturbance to coastal waterbirds	Construction activities including capital dredging, operational running of berths	Qualifying bird species were recorded by the applicant ion the foreshore in the area of the Proposed Development. As the marine works will be in the vicinity of qualifying bird features, there exists a pathway for LSE through disturbance.	Yes, in relation to: • Avocet • Bittern • Hen harrier • Golden plover • Bar-tailed godwit • Ruff • Bittern • Marash harrier • Avocet • Little tern • Shelduck • Knot • Dunlin • Black-tailed godwit • Redshank • Waterbird assemblage of international importance • Criterion 5 (wintering waterfowl) • Criterion 6 (bird species occurring at levels of international Importance

European site and qualifying features	Pathway of effect	Phase of the Proposed Development which may cause an effect	LSE conclusions	Potential for LSE
	Direct changes to coastal waterbird foraging and roosting habitat as a result of marine infrastructure	Operation of berths	Qualifying bird species were recorded by the applicant ion the foreshore in the area of the Proposed Development. As the marine works will directly impact these foreshore habitats, there exists a pathway for LSE on coastal waterbird foraging and roosting habitat.	Yes, in relation to: • Avocet • Bittern • Hen harrier • Golden plover • Bar-tailed godwit • Ruff • Bittern • Marash harrier • Avocet • Little tern • Shelduck • Knot • Dunlin • Black-tailed godwit • Redshank • Waterbird assemblage of international importance • Criterion 5 (wintering waterfowl) • Criterion 6 (bird species occurring at levels of international Importance
	Lighting effects on coastal waterbirds	Operation: Berth operations Construction: Safety lighting on equipment	The Applicant highlighted literature that suggests artificial lighting could improve the foraging of waterbirds and therefore LSE have been ruled out.	No

4.7 NE were content with the conclusions of the following pathways in Tables 3, 4 and 5 in the Applicant's HRA Report [ER Appendix C 1.2.11]:

- impact of capital dredge disposal on SPA features;
- indirect loss or change to seabed habitats and species as a result of changes to hydrodynamic and sedimentary processes;
- water and sediment quality on designated features of the Humber Estuary SAC, SPA and Ramsar site; and
- lighting on designated features of the Humber Estuary SAC, SPA and Ramsar site.

4.8 During Examination, several issues were raised by IPs in relation to the omission of certain LSE pathways during construction and operational phases of the Proposed Development and reviewed by the ExA as follows [ER Appendix C 1.2.30].

Accidental spillages (construction and operation)

4.9 The Applicant explained that the use of the industry guidance to control changes in water quality from accidental spillages during construction was not mitigation designed specifically to avoid harmful impacts to European feature but were industry standard practice and therefore can be used in the screening for LSE. In their response to Question 4 in the RIES NE (REP7-038) advised that this impact pathway be screened into the Appropriate Assessment and the best practice pollution/spillage prevention measures detailed in the Construction Environmental Management Plan (CEMP). This pathway was not progressed to appropriate assessment by the Applicant stating in the final HRA Report that the potential for accidental spillages would be negligible [ER Appendix C 1.2.12].

4.10 The potential for accidental spillage to occur during operation did not appear to be addressed in the Applicant's first HRA Report. The oil spillage contingency plan was referred to by the Applicant in response to ExA's first written questions, citing the Port Marine Safety Code (PMSC). This Code identifies the environment as a receptor and is a …reactive control measure and which helps reduce the environmental consequences of a collision". This matter was assigned 'agreed' by the Applicant in its Statement of Common Ground (SoCG) with NE and by way of explanation stated that "…*accidental spillages will also be negligible through the application of standard operational practices and protocols*." The final HRA Report did not progress this pathway to appropriate assessment stating that the potential for accidental spillages during operation would be negligible [ER Appendix C 1.2.13].

4.11 The Secretary of State notes that the ExA disagreed with the Applicant and its reliance on the reactive control measures in the PMSC in that without mitigation measures there is potential LSE from this pathway. The ExA progressed this impact pathway to Stage 2 Appropriate Assessment [ER Appendix C 1.2.31], thereby agreeing with NE's position [ER Appendix C 1.2.12]. The Secretary of State agrees, and that this pathway is progressed to Appropriate Assessment.

Air quality impacts

Construction traffic

4.12 NE advised that emissions from construction traffic required assessment in response to the Applicant's first HRA Report. That Report concluded there was no potential for LSE from this pathway to cause physical change to habitats resulting from deposition of airborne pollutants on designated features. A justification for the conclusion was provided by the Applicant (REP1-013) explaining that NE's guidance 'Approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations' was used to inform the assessment and maintained in the second HRA Report (REP5-020) there would be no LSE. NE, in their response to ExA's RIES Question 6, confirmed it agreed with the conclusions of the screening assessment for this pathway set out in Table 3 of the second HRA Report [ER Appendix C 1.2.14].

4.13 The Secretary of State notes that the ExA was content that there was no potential for LSE from air quality impacts during construction based on the Applicant's justification in its relevant representation at Deadline 1 (REP1-013) and NE's agreement with this [ER Appendix C 1.2.32].

4.14 The Secretary of State is satisfied that there is no LSE from air quality during construction on the qualifying features of the Humber Estuary SAC, Humber Estuary SPA, Humber Estuary Ramsar and The Wash and North Norfolk Coast SAC.

4.15 The Secretary of State is satisfied that that there would not be LSE from construction traffic emissions on the qualifying features of the Humber Estuary SAC, Humber Estuary SPA, Humber Estuary Ramsar and The Wash and North Norfolk Coast SAC.

Construction dust

4.16 The potential for LSE air quality impacts from construction dust was ruled out in the first HRA Report (APP-115). The Applicant's reasoning being that the majority of habitats closest to the Proposed Development are marine and not sensitive to smothering from dust deposition. The conclusion was revised in the second HRA Report (REP5-020) to include additional habitat features following questions raised by NE in its additional submission (AS-015). The Applicant concluded, on a precautionary basis, that there would be potential for LSE on the feature 'H1140 mudflats and sandflats not covered by sea water at low tide' of the Humber Estuary SAC and Criterion 1 qualifying feature of the Humber Estuary Ramsar site [ER Appendix C 1.2.15].

4.17 The Secretary of State agrees with this conclusion and impacts from construction dust are progressed to Stage 2 Appropriate Assessment.

Underwater noise from vessels operations (including maintenance dredging and dredge disposal)

4.18 NE considered the Applicant had not provided sufficient justification to screen out LSE from this impact pathway for qualifying species features the river and sea lampreys and grey seal of the Humber Estuary SAC, and harbour [common] seal of The Wash and North Norfolk Coast SAC. NE stated that this pathway should be screened in and ambient noise levels should be provided to assess further adverse effects on integrity. The Applicant's second HRA Report (REP5-020) was amended to identify LSE from this pathway on a precautionary basis for migratory fish and marine mammals. This issue was assigned as "matter not agreed – no material impact" in the SoCG because NE was satisfied this pathway was screened in but recognised that no information on ambient underwater noise levels at the PoI was provided. NE did not consider this would materially affect the outcomes of the assessment [ER Appendix C 1.2.16].

4.19 The ExA noted the Applicant's precautionary approach in concluding that there was potential for LSE arising from underwater noise from vessel operations including maintenance dredging and dredge disposal on fish and migratory mammals during operation [ER Appendix C 1.2.33].

4.20 The Secretary of State agrees with this and underwater noise from vessel operations is progressed to Stage 2 Appropriate Assessment.

Changes to seabed habitats and features from sediment disposal

4.21 The initial HRA report (APP-115) excluded LSE arising from changes to benthic habitats/species as a result of sediment deposition during maintenance dredging. NE disagreed with the conclusion of no LSE from this impact pathway because the amount of smothering was only estimated, and the extent of deposition had not been defined. Further evidence to support a conclusion of no LSE was provided in Table 3 of the Applicant's second HRA Report (REP5-020) but this was not agreed to by NE (REP7-038). NE considered it was inappropriate to conclude that there was no potential LSE for sedimentation from maintenance dredging/dredge disposal on seabed habitats and species. NE considered that while the impact may be low risk the effects arising still represent a potential impact [ER Appendix C 1.2.17 to 1.2.18].

4.22 The Secretary of State notes that the ExA, agreeing with NE, considered that the even though the risk of LSE would be low, a risk would still be present in relation to changes to seabed habitats and features because of sediment deposition during maintenance dredging [ER Appendix C 1.2.34].

4.23 The Secretary of State agrees and that there is potential of LSE from this impact pathway and is progressed to stage 2 Appropriate Assessment.

Non-toxic contaminations through elevated suspended sediment concentrations (SSC)

4.24 The potential impacts from elevated SSC during capital dredging was assessed on qualifying habitats estuaries, mudflats and sandflats not covered by seawater at low tide and on qualifying species sea lamprey and river lamprey. A further assessment of elevated SSC from capital dredge disposal was completed for sandbanks which are slightly covered by sea water all of the time and for sea and river lamprey. The

Applicant concluded LSE. NE considered that marine mammals should also be assessed for these effects. This was clarified by the Applicant at Deadline 1 in its response to relevant representations indicating that this pathway had been considered in Table 3 of the first HRA Report, concluding no LSE. NE confirmed that it was content with this matter [ER Appendix C 1.2.19].

4.25 The Secretary of State is satisfied that LSE can be ruled out on the qualifying features of the Humber Estuary SAC, Humber Estuary SPA, Humber Estuary Ramsar and The Wash and North Norfolk Coast SAC.

Potential in-combination effects

4.26 The Applicant's in combination assessment was described in section 4.1.4 of its HRA Report (REP8-014) [ER Appendix C 1.2.20]. The in combination assessment was screened into the Stage 2 Appropriate Assessment of the Applicant's HRA. The shortlist of relevant plans and projects for the Applicant's in combination assessment was based on the long list developed for the ES Chapter 20 Cumulative and In combination Effects. No other plans and projects were highlighted by IPs during examination [ER Appendix C 1.2.22].

4.27 Table 36 of the Applicant's final HRA Report lists the plans and projects which could lead to possible in-combination [ER Appendix C 1.2.21}.

4.28 NE raised concerns that in combination effects should be presented at the screening stage and was not explicit in the initial HRA Report. Following two requests from the ExA for clarification regarding the in combination assessment and whether the Proposed Development would have LSE, the Applicant made no changes to its second HRA Report maintaining that the screening tables (i.e. Tables 3, 4 and 5) did consider both alone and in combination impact pathways. In the third HRA Report minimal changes to Tables 3, 4 and 5 adding for the majority of cases the following text "*in combination effects are assumed to be negligible and not of a magnitude to cause a LSE*" [ER Appendix C 1.2.23 to 1.2.25]. The Secretary of State notes that these changes have been maintained in the final HRA Report.

4.29 The Secretary of State notes that the scope of the in combination assessment was disputed throughout the Examination. NE explained that the Applicant's assessment should be evidence based and not on the assumption of negligibility. It further explained that the in combination LSE assessment is only required where a small effect, which is not significant alone, has the potential to interact with other minor effects and lead to LSE. The Secretary of State has noted that NE concluded that the Applicant's approach would not ultimately affect the assessment of effects on site integrity. It is noted that the Applicant maintained its position that the information in its HRA Reports was sufficient to inform HRA conclusions [ER Appendix C 1.2.26].

4.30 The Secretary of State notes that the ExA considered the Applicant's approach to the in combination assessment did not adhere to the requirements of the Habitats Regulations. The matter of the scope of the in combination assessment and resulting potential for LSE remained in dispute between the Applicant and NE throughout the Examination [ER Appendix C 1.2.35].

4.31 The ExA concluded that LSE could occur to the qualifying features of the four European sites from the Proposed Development alone or in combination with other plans and projects [ER Appendix C 1.2.36]. The Secretary of State agrees with this conclusion and these matters have been progressed to stage 2 Appropriate Assessment.

LSE Screening Conclusions

4.32 The Greater Wash SPA was the only site for which the Applicant concluded no LSE would occur from the Proposed Development either alone or in combination with other plans and projects. NE agreed with this conclusion [ER Appendix C 1.2.27].

4.33 The Secretary of State finds no reason to disagree and concurs with that conclusion for the Greater Wash SPA.

4.34 The Secretary of State notes that the Applicant concluded that LSE could occur from the Proposed Development both alone and in combination with other plans and projects to the qualifying features of four European sites in the NSN listed below:

- Humber Estuary SAC;
- Humber Estuary SPA;
- Humber Estuary Ramsar;
- The Wash and North Norfolk SAC [ER Appendix C 1.2.28].

4.35 Table C of the ExA Recommendation Report is reproduced below as Table 3 summarising the European sites, the qualifying features and the potential effects pathways requiring appropriate assessment [ER Appendix C 1.2.36].

4.36 In reaching the conclusion of the screening assessment the Secretary of State took no account of any measures intended to avoid or reduce the potentially harmful effects on European sites.

Table 3 European sites and qualifying features requiring an appropriate assessment.

European site	Relevant qualifying features	Pathway of effect (LSE alone / in combination)
Humber Estuary SAC	Sandbanks which are slightly covered by sea water all of the time	• Direct changes to benthic habitats and species as a result of sediment deposition from capital dredge • Indirect loss or change to seabed habitats and species as a result of changes to hydrodynamic and sedimentary processes from dredge disposal. • Changes in water and sediment quality on benthic habitats and species resulting from dredge disposal. • The potential introduction and spread of non-native species resulting from construction activities, dredging and dredge disposal • Non-native species transfer during vessel operations
Humber Estuary SAC	Estuaries	• Direct loss of intertidal habitat resulting from capital dredge and piling • Direct loss of subtidal habitat resulting from piling • Direct changes to benthic habitats and species as result of seabed removal from capital dredge • Direct changes to benthic habitats and species as a result of sediment deposition from capital dredge • Indirect loss or change to seabed habitats and species as a result of changes to hydrodynamic and sedimentary processes from capital dredge, piling and dredge disposal • Changes in water and sediment quality on benthic habitats and species resulting from capital dredge and dredge disposal • The potential introduction and spread of non-native species resulting from construction activities, dredging and dredge disposal • Direct changes to benthic habitats and species beneath marine infrastructure due to shading during operation • Changes to intertidal habitats and species as a result of the movement of Ro-Ro vessels during berth operation • Changes to benthic habitats and species as result of seabed removal during maintenance dredging • Non-native species transfer during vessel operations

European site	Relevant qualifying features	Pathway of effect (LSE alone / in combination)
Humber Estuary SAC	Mudflats and sandflats not covered by seawater at low tide	• Direct loss of intertidal habitat resulting from capital dredge and piling • Direct loss of subtidal habitat resulting from piling • Direct changes to benthic habitats and species as result of seabed removal from capital dredge • Direct changes to benthic habitats and species as a result of sediment deposition from capital dredge • Indirect loss or change to seabed habitats and species as a result of changes to hydrodynamic and sedimentary processes from capital dredge and piling • Changes in water and sediment quality on benthic habitats and species resulting from capital dredge • The potential introduction and spread of non-native species resulting from construction activities, dredging and dredge disposal • Physical change to habitats resulting from the deposition of airborne pollutants from construction dust emissions • Direct changes to benthic habitats and species beneath marine infrastructure due to shading during operation • Changes to intertidal habitats and species as a result of the movement of Ro-Ro vessels during berth operation • Changes to benthic habitats and species as result of seabed removal during maintenance dredging • Non-native species transfer during vessel operations • Physical change to habitats resulting from the deposition of airborne pollutants from operational marine and road vehicle emissions
Humber Estuary SAC	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	• Physical change to habitats resulting from the deposition of airborne pollutants from operational marine and road vehicle emissions
Humber Estuary SAC	Sea lamprey River lamprey	• Changes in water and sediment quality on migratory fish species resulting from capital dredge and dredge disposal • Underwater noise effects on migratory fish species resulting from capital dredge, piling, dredge disposal and vessel operations including maintenance dredge and dredge disposal

European site	Relevant qualifying features	Pathway of effect (LSE alone / in combination)
Humber Estuary SAC	Grey seal	• Underwater noise effects on marine mammals resulting from capital dredging, piling, dredge disposal and vessel operations including maintenance dredge and maintenance dredge disposal • Changes in water and sediment quality on marine mammals due to piling, capital dredge and dredge disposal
Humber Estuary SPA	Common shelduck (non-breeding) Red knot (non-breeding) Bar-tailed godwit (non-breeding) Black-tailed godwit (non-breeding) Dunlin (non-breeding) Common redshank (non-breeding) Waterbird assemblage	• Direct loss or change of supporting intertidal habitat resulting from piling and capital dredging • Indirect loss of supporting intertidal habitat as a result of changes to hydrodynamic and sedimentary processes from piling and capital dredging • Noise and visual disturbance to coastal waterbirds resulting from construction activity (including capital dredging) and berth operations • Direct changes to coastal waterbird foraging and roosting habitat as a result of marine infrastructure from berth operations

European site	Relevant qualifying features	Pathway of effect (LSE alone / in combination)
Humber Estuary Ramsar	Criterion 1: Natural wetland habitats that are of international importance	• Direct loss of intertidal habitat resulting from capital dredge and piling • Direct loss of subtidal habitat resulting from piling • Direct changes to benthic habitats and species as a result of seabed removal from capital dredge • Direct changes to benthic habitats and species as a result of sediment deposition from capital dredge and dredge disposal • Indirect loss or change to seabed habitats and species as a result of changes to hydrodynamic and sedimentary processes from capital dredge, piling and dredge disposal • Changes in water and sediment quality on benthic habitats and species resulting from capital dredge and dredge disposal • The potential introduction and spread of non-native species resulting from construction activities, capital dredge and dredge disposal • Physical change to habitats resulting from the deposition of airborne pollutants from construction activities • Direct changes to benthic habitats and species beneath marine infrastructure due to shading during operation • Changes to intertidal habitats and species as a result of the movement of Ro-Ro vessels during berth operation • Changes to benthic habitats and species as result of seabed removal during maintenance dredging • Non-native species transfer during vessel operations • Physical change to habitats resulting from the deposition of airborne pollutants nitrogen oxides (NOx) and nitrogen (N) deposition) during operation
Humber Estuary Ramsar	Criterion 3: Supports populations of plants and/or animal species of international importance	• Underwater noise effects on marine mammals resulting from capital dredge, piling, maintenance dredge and dredge disposal

European site	Relevant qualifying features	Pathway of effect (LSE alone / in combination)
	Criterion 5: Bird assemblages of international importance Criterion 6: Bird species/populations occurring at levels of international importance	• Direct loss or change to supporting intertidal habitat resulting from capital dredge and piling • Indirect loss of supporting intertidal habitat as a result of hydrodynamic and sedimentary processes from capital dredge and piling • Noise and visual disturbance to coastal waterbirds resulting from construction activities (including capital dredging) • Direct changes to coastal waterbird foraging and roosting habitat as a result of marine infrastructure from berth operations • Noise and visual disturbance to coastal waterbirds resulting from berth operations
	Criterion 8: Internationally important source of food for fishes, spawning grounds, nursery and/or migration path	• Changes in water and sediment quality on migratory fish species resulting from piling, capital dredge and dredge disposal • Underwater noise effects on migratory fish species resulting from capital dredge, piling, dredge disposal and vessel operations including maintenance dredge and dredge disposal
	Sea lamprey River Lamprey	• Changes in water and sediment quality on migratory fish species resulting from dredge disposal
	Grey seal	• Underwater noise effects on marine mammals resulting from dredge disposal
The Wash and North Norfolk Coast SAC	Harbour [common] seal	• Underwater noise effects on marine mammals resulting from capital dredging, piling, dredge disposal and vessel operations including maintenance dredge and maintenance dredge disposal

5. STAGE 2: APPROPRIATE ASSESSMENT

5.1 As LSE cannot be excluded, the Secretary of State as the competent authority is required to undertake an appropriate assessment to determine the implications for the conservation objectives of the affected European sites. In line with the requirements of regulation 63 of the Habitats Regulations:

"(5)…the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site'; and

"(6) In considering whether a plan or project will adversely affect the integrity of the site, the competent authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given".

Conservation objectives

5.2 As mentioned in paragraph 1.11 above, where an appropriate assessment is required in respect of a European site, regulation 63(1) of the Habitats Regulations requires that it an appropriate assessment of the implications of the plan or project for the site in view of its conservation objectives. Government guidance also recommends that in carrying out the stage one assessment (screening), applicants must check if the proposal could have a significant effect on a European site that could affect its conservation objectives.

5.3 The conservation objectives relevant to this HRA Report, as published by NE, are set out in Annex 2 of this HRA Report.

5.4 The conservation objectives for the Humber Estuary Ramsar site are not available. The Secretary of State notes that the Applicant explains in Table 6 of its HRA Report that "*For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, instead focussing on the production of High-Level Conservation Objectives. As the provisions of the Habitats Regulations relating to HRAs extend to Ramsar sites, Natural England considers the Conservation Advice packages for the overlapping European Marine Site designations to be, in most cases, sufficient to support the management of the Ramsar interests*" and to "*See the conservation objectives for Ramsar interest features covered by the overlapping Humber Estuary SAC and Humber Estuary SPA*." The Secretary of State finds no reason to disagree with this approach.

5.5 The Applicant further noted that the condition of the features of the Humber Estuary SAC, SPA and Ramsar were "*not assessed*". The Site of Special Scientific Interest (SSSI) units condition assessment statement predominantly class 88.21% of the area of estuary to be in 'unfavourable recovering' condition and 6.09% in favourable condition [ER Appendix C 1.3.2]. The Applicant was referred to the Supplementary Advice for Humber Estuary SAC that the conservation objectives for the 'mudflats and sandflats not covered by seawater at low tide' is set to "*restore*" and that this should be considered in the assessment of direct loss of qualifying habitat [ER Appendix C 1.3.3].

5.6 The Secretary of State notes that the ExA was content that the correct impact pathways have been assessed based on the information provided [ER Appendix C 1.4.2].

5.7 The Secretary of State also notes that the ExA was also content that an assessment in combination with other plans and projects can be based on the information in the Applicant's final HRA Report and that no other plans and projects are required to be taken into account [ER Appendix C 1.4.3].

5.8 The Secretary of State has undertaken an objective scientific assessment of the implications of the Proposed Development on the qualifying features of the Humber Estuary SAC, Humber Estuary SPA, Humber Estuary Ramsar site and The Wash and North Norfolk Coast SAC using the best available scientific knowledge. The assessment has been made in light of the conservation objectives for the SAC. A summary of the Secretary of State's appropriate assessment is presented below.

Consideration of mitigation measures

5.9 The Applicant's final HRA Report (REP8-014) provided a description of the mitigation measures for the pathways assessed. Following a request from the ExA, the final HRA Report also included Table 40 which summarised the mitigation measures, the discussion points during examination and how mitigation would be secured [ER Appendix C 1.4.4].

Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site

Accidental spillages

Construction

5.10 The Applicant had explained that the application of industry guidance to control accidental spillages was not mitigation in the HRA context. NE, however, had advised that accidental spillages during construction be progressed to appropriate assessment and that the best practice pollution spillage prevention measures detailed in the CEMP (APP-111; Table 3.2 Water and sediment quality) constituted mitigation. The Applicant in its fourth HRA stated that the potential for accidental spillages would be negligible, and the pathway was not taken to forward for appropriate assessment [ER Appendix C 1.2.12].

5.11 In its response to RIES Q4 NE (REP7-038) concluded that AEoI on the Humber Estuary designated sites during the construction phase from accidental spillages can be ruled out based on the best practice pollution and spillage prevention measures set out in Table 3.2 of the submitted CEMP [ER Appendix C 1.4.5]. The Secretary of State has noted that Table 3.2 of the submitted CEMP has been incorporated into what has become a standalone Outline Offshore CEMP. It is further noted that Condition 11 of the Deemed Marine Licence (DML) (i.e. Schedule 3 in the recommended DCO (rDCO)) would secure compliance with an Offshore CEMP to be approved by the Marine Management Organisation (MMO) [ER Appendix C 1.4.5].

5.12 The Secretary of State is content that AEoI from accidental spillages during construction can be ruled out on the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site.

Operation

5.13 Within the SoCG (REP6-010) between the Applicant and NE this matter was assigned as "agreed" (3 August 2023) because the impact of accidental spillages from operational vessel movements would "…*be negligible during all phases through the application of standard operational practices and protocols*…"; the protocols being the PMSC [ER Appendix C 1.4.6].

5.14 The Secretary of State is content that AEoI from accidental spillages during operation can be ruled out on the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site.

Humber Estuary SAC and Humber Estuary Ramsar site

Construction phase noise and vibration impacts

5.15 Following concerns from NE, the Applicant had revised its second HRA Report to provide clearer distinction between the impact of injury and disturbance from construction phase underwater noise from vibration effects. NE confirmed that the additional information addressed its concerns in its response to RIES Q17 [ER Appendix C 1.4.7].

5.16 The mitigation identified by the Applicant in its final HRA Report includes the Outline Offshore CEMP and compliance with the Outline Offshore CEMP would be secured in the rDCO [ER Appendix C 1.4.8].

Vibro-piling and underwater noise: Marine mammals and Fish

5.17 It is noted that NE has stated that it broadly agreed with the mitigation set out in the Applicant's first HRA Report to reduce the noise levels from piling and associated underwater noise and vibration on marine mammals during construction [ER Appendix C 1.4.9].

Piling: grey seal

5.18 The Applicant (APP-115) had considered in Table 31 of its initial HRA report that with the mitigation proposed, the potential for injury effects for grey seals arising from potential underwater noise and vibration during piling causing avoidance responses and intermittent barrier effects is considered to be limited. In relation to the in combination effects from underwater noise with other plans and projects, the Applicant's ES (REP7-008) noted that other projects with underwater effects would require similar mitigation to the Proposed Development and therefore concluded in its first HRA Report (APP-115) that underwater noise effects on grey seal during piling was unlikely. NE noted that the proposed mitigation is aimed at reducing injury rather than addressing barrier effects. In its response to RIES Q15 NE broadly agreed with the mitigation measures proposed in relation to impacts from underwater noise and vibration on marine mammals during construction. NE

confirmed (REP9-018) that it agreed that AEoI on grey seals can be excluded both alone and in combination from this pathway [ER Appendix C 1.4.17].

5.19 The Secretary of State agrees with this conclusion that AEoI can be ruled out from underwater noise and piling on the grey seal qualifying species feature of the Humber Estuary SAC and Humber Estuary Ramsar site.

Sea Lamprey

5.20 In relation to lamprey NE was not satisfied regarding the evidence from vibro-piling during the nighttime. The Applicant's second HRA Report did not provide a specific assessment of the potential impact of vibro-piling during the nocturnal migration period for lamprey and that the evidence was not sufficient to rule out adverse effects. The Applicant agreed to NE's request that the nighttime restrictions on percussive piling be applied to vibro-piling as well [ER Appendix C 1.4.10].

5.21 Issues regarding the timing of and restrictions on percussive piling were raised by NE and the MMO. NE requested clarification on the dates, which are stated to be between 1 March and 31 March, 1 June to 30 June and 1 August to 31 October. The MMO maintained its position that the restrictions within the waterbody should be between 1 April to 31 May inclusive to cover part of the downstream smolt migration and from 1 June to 30 June and 1 August to 31 October to minimise impacts on silver eels, river lamprey and adult Atlantic salmon. In its response the Applicant explained that the time periods were reflective of the sensitive periods for both glass eels and river lamprey, following information provided by the Environment Agency (2013) regarding the movement of river lamprey in the Humber basin (REP1-013) [ER Appendix C 1.4.11].

5.22 An alternative approach to restrictive piling timings during June (for Salmonid smolts) and August to October (for adult Salmonids) taking into account of tidal states for piling were proposed by the MMO (REP1-020 and REP2-016) but noted the Applicant's submissions that piling during specific tidal states and hours of daylight would extend the construction period. This issue was acknowledged by the MMO [ER Appendix C 1.4.11].

Vibro-piling

5.23 Further details on how much piling using vibro-piling could be achieved was requested by NE to better understand how much of this mitigation measure could be applied across the piling campaign. The MMO considered that there would be a risk of impact from both percussive and vibro-piling operations, particularly behavioural effects [ER Appendix C 1.4.12].

5.24 The Applicant explained that the worst-case scenario assessed in its underwater noise assessment in the ES (APP-088) was approximately 20 minutes of vibro-piling and 180 minutes of impact piling per day in a 12-hour period and that less than four piles were likely to be driven per day [ER Appendix C 1.4.13].

5.25 The response from the Centre for Environment, Fisheries and Aquaculture Science indicating that the use of four piling rigs per day may lead to increased sound

exposure levels over a 24-hour period compared to that presented in the Applicant's assessment was referenced by NE and MMO [ER Appendix C 1.4.14]. A daily restriction for piling was suggested by the MMO and referred to Condition 13 in the DML and the revised percussive piling protocol that would be in operation if the 180 minutes percussive piling duration is exceeded. The omission of a daily limit for percussive piling in this condition was noted by the MMO but it was considered the weekly reporting would allow for reactive measures to be implemented [ER Appendix C 1.4.15].

5.26 NE were content with the use of as much vibro-piling as possible during the piling period but that a limitation of this process is that it cannot penetrate harder deeper layers of bedrock. Therefore, the louder percussive piling method could not be replaced entirely [ER Appendix C 1.4.15].

5.27 The MMO confirmed that it was also satisfied that the potential in combination between the Proposed Development and the Immingham Green Energy Terminal (IGET) had been addressed. The MMO (REP9-017) indicated that it was content that "*where percussive piling is occurring simultaneously across the two projects, these respective time periods will not be double counted as the temporal exposure to this effect is not increased*." and that "…*there will be a greater risk of disturbance if simultaneous/concurrent piling is undertaken*." [ER Appendix C 1.4.16].

5.28 The Secretary of State notes that NE (REP9-018) agreed that with the mitigation measures secured that AEoI can be ruled out both alone and in combination on the lamprey features.

5.29 The Secretary of State agrees with this conclusion that AEoI can be ruled out from underwater noise and piling on the sea lamprey qualifying species feature of the Humber Estuary SAC and Humber Estuary Ramsar site.

Introduction and spread of non-native species

5.30 The Applicant in paragraph 4.12.7 of its first HRA Report (APP-115) stated that biosecurity measures would be developed using best practice guidance for England and Wales to minimise the risk of the introduction and spread of non-native species during construction. The Applicant further stated in paragraph 4.12.8 that no additional mitigation was identified in relation to this pathway, and that the assessment was based on the application of standard best practices and that in paragraph 4.12.9 the biosecurity control measures will be included in the CEMP [ER Appendix C 1.4.18].

5.31 NE requested that a similar biosecurity plan be produced for the operational phase. The Secretary of State notes that the ExA asked the Applicant to provide details of the existing biosecurity measures that had been agreed with NE for the operational phase and indicate how these would be secured in any made DCO (REIS Q24) [ER Appendix C 1.4.19]. In response the Applicant explained (REP7-028) the approach was to identify the highest risk pathways for introduction of non-native species and introduce measures that allow for the management of those risks as far as reasonably practicable. The Applicant also states that there is space within the biosecurity plan to include specific measures for species known to be present and

to reference non-routine activities. The Applicant stated that it did not consider it necessary to secure these biosecurity measures within the DCO as these procedures are embedded within normal operational controls employed at the Port. In the draft SoCG (REP5-016) and in its response to RIES Q25 (REP7-038) NE confirmed that it was satisfied with the existing biosecurity measures during the operational phase of the Proposed Development [ER Appendix C 1.4.20]

5.32 The Secretary of State is content that with the mitigation measures agreed and in place AEoI can be ruled out from the introduction and spread of non-native species on the qualifying features of Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site.

Humber Estuary SPA and Humber Estuary Ramsar

Airborne noise and visual disturbance (operation)

5.33 Mitigation in the form of precautionary screening was detailed in the Applicant's second HRA Report (REP5-020) during operation for disturbance impacts on the waterbird features of the Humber Estuary SPA and Ramsar site. It was explained that after two years the screens would be removed because the birds would be expected to become habituated to such activities. Following NE questioning on whether the screening could be permanent the Applicant explained that the measure was temporary and had been proposed to assist in habituation in the new infrastructure but in the context of the location of the new berths within the port, it was not considered necessary [ER Appendix C 1.4.22].

5.34 NE had initially disagreed that monitoring and annual reports could be considered a mitigation measure in itself, as proposed in the Applicant's first HRA Report (APP-115). Following revisions to the Applicant's second HRA Report, where the data would be used to help inform the evidence base with respect to this pathway in future assessment, NE in its response to RIES Q36 (REP7-038) did not consider adaptive monitoring necessary to reach a conclusion of no AEoI [ER Appendix C 1.4.23].

5.35 The Secretary of State notes that in its response to RIES Q37 NE (REP7-038) confirmed it was content with conclusion of no AEoI from airborne noise and visual disturbance during operation.

5.36 The Secretary of State concurs with this conclusion that AEoI from airborne noise and visual disturbance can be ruled out on the qualifying waterbird features of Humber Estuary SPA and Humber Estuary Ramsar site.

Effect pathways for which no IPs raised concerns and no AEoI was agreed

5.37 For several effect pathways the Applicant had concluded no AEoI from the Proposed Development on the qualifying features of the European sites and features assessed either alone or in combination with other plans and projects [ER Appendix C 1.4.24. At the close of Examination, the Applicant's conclusions for these pathways were not disputed by any of the IPs. It is noted that NE confirmed that subject to appropriate mitigation, as outlined in the Application documents being

secured adequately, it was satisfied that potential effects would be unlikely to result in AEoI on the Humber Estuary sites [ER Appendix C 1.4.25].

5.38 The ExA summarised these pathways and features in Table D of its Recommendation Report. The Secretary of State has reproduced Table D with some modifications for ease as Table 4 below, and agrees with the conclusions drawn in Table 4:

Table 4 Effect pathways for which Applicant concluded no AEoI alone and in combination was not disputed by IPs and agreement with Natural England

European site	Qualifying features	Effect pathway	No AEoI alone and in combination	Mitigation required	Agreement with NE
Humber Estuary SAC	Estuaries Sandbanks which are slightly covered by seawater all of the time	Changes to qualifying habitats as a result of sediment deposition during capital dredge disposal	No AEoI (Table 14 APP-115)	None required	Yes, see AS-015, paragraph 2.1.4.2
	Estuaries Mudflats and sandflats not covered by seawater at low tide	Changes to qualifying intertidal habitats as a result of the movement of Ro-Ro vessels during operation	No AEoI (Table 16 APP-115)	None required	Yes, see AS-015, ID16
	Estuaries Mudflats and sandflats not covered by seawater at low tide	Indirect loss or change to qualifying habitats and species from changes to hydrodynamic and sedimentary processes during the marine works	No AEoI (Table 17 APP-115)	None required	Yes, see AS-015, paragraph 2.1.4.3
	Estuaries Sandbanks which are slightly covered by seawater all of the time	Indirect changes to qualifying habitats from changes to hydrodynamic and sedimentary processes during capital dredge disposal	No AEoI (Table 18 APP-115)	None required	Yes, see AS-015, ID18
	Estuaries Mudflats and sandflats not covered by seawater at low tide	Direct changes to qualifying habitats beneath marine infrastructure due to shading	No AEoI (Table 19 APP-115)	None required	Yes, see AS-015, ID47
	Estuaries Mudflats and sandflats not covered by seawater at low tide Sea lamprey River lamprey	Elevated SSC during capital dredging on qualifying habitats and species during construction and operational phases	No AEoI (Table 22 APP-115)	None required	No issues raised by IPs
	Estuaries Mudflats and sandflats not covered by seawater at low tide	Impacts on qualifying habitats and species from the release of contaminants during capital dredging	No AEoI (Table 24 APP-115)	None required	No issues raised by IPs

European site	Qualifying features	Effect pathway	No AEoI alone and in combination	Mitigation required	Agreement with NE
	Sea lamprey River lamprey				
	Estuaries Mudflats and sandflats not covered by seawater at low tide Sea lamprey River lamprey	Impacts on qualifying habitats and species from the release of contaminants during capital dredging disposal	No AEoI (Table 25 APP-115)	None required	No issues raised by IPs
	Sea lamprey River lamprey Grey seal	Effects on qualifying species due to underwater noise and vibration during dredging	No AEoI (Table 32 APP-115)	None required	For lamprey no IPs raised issues For grey seal NE agreed see AS-015, ID24
	Estuaries Sandbanks which are slightly covered by seawater all of the time Mudflats and sandflats not covered by seawater at low tide	Introduction and spreading non-native species during construction on qualifying habitats	No AEoI (Table 33 APP-115)	Biosecurity control measures included within CEMP (	Yes, see AS-015, ID21
	Estuaries Sandbanks which are slightly covered by seawater all of the time Mudflats and sandflats not covered by seawater at low tide	Introduction and spreading non-native species during operation on qualifying habitats	No AEoI (Table 34 APP-115)	Biosecurity control measures already exist as standard practice (see paragraphs 5.30 – 5.31 of this HRA)	No issues raised by IPs
Humber Estuary SPA	Common shelduck (Non-breeding) Red knot (non-breeding) Bar-tailed godwit (non-breeding) Black-tailed godwit (non – breeding) Dunlin (Non-breeding)	Changes to qualifying species as a result of the removal of seabed material during capital dredging.	No AEoI (Table 12 in APP-115)	None required	No issues raised by IPs

European site	Qualifying features	Effect pathway	No AEoI alone and in combination	Mitigation required	Agreement with NE
	Common redshank (Non-breeding) Waterbird assemblage				
	Common shelduck (Non-breeding) Red knot (non-breeding) Bar-tailed godwit (non-breeding) Black-tailed godwit (non – breeding) Dunlin (Non-breeding) Common redshank (Non-breeding) Waterbird assemblage	Indirect changes to qualifying habitats and species as a result of changes to hydrodynamic and sedimentary processes as a result of the marine works.	No AEoI (Table 17 in APP-115)	None required	No issues raised by IPs
Humber Estuary Ramsar	Criterion 1 – natural wetland habitats that are of international importance	Changes to qualifying habitats resulting from sediment deposition during capital dredge disposal.	No AEoI (Table 14 in APP-115)	None required	Yes, see ID16 in AS-015
	Criterion 1 – natural wetland habitats that are of international importance	Changes to qualifying intertidal habitats resulting from the movement of Ro-Ro vessels during operation.	No AEoI (Table 16 in APP-115)	None required	Yes, see ID16 in AS-015
	Criterion 1 – natural wetland habitats that are of international importance Criterion 5 – Bird Assemblages of International Importance Criterion 6 – Bird Species/Populations Occurring at Levels of International Importance	Indirect loss or change to qualifying habitats and species resulting form changes to hydrodynamic and sedimentary processes during the marine works.	No AEoI (Table 17 in APP-115)	None required	Yes, see paragraph 2.1.4.3 in AS-015

European site	Qualifying features	Effect pathway	No AEoI alone and in combination	Mitigation required	Agreement with NE
	Criterion 1 – natural wetland habitats that are of international importance	Indirect changes to qualifying habitats resulting from changes to hydrodynamic and sedimentary processes during capital dredge disposal.	No AEoI (Table 18 in APP-115)	None required	Yes, see ID18 in AS-015
	Criterion 1 – natural wetland habitats that are of international importance	Direct changes to qualifying habitats beneath marine infrastructure due to shading.	No AEoI (Table 19 in APP-115)	None required	Yes, see ID47 in AS-015
	Criterion 1 – natural wetland habitats that are of international importance Criterion 8 – Internationally important source of food for fishes, spawning grounds, nursery and/or migration path.	Direct impacts to qualifying habitats and species via releasing contaminants during capital dredging.	No AEoI (Table 24 in APP-115)	None required	No issues raised by IPs
	Criterion 1 – natural wetland habitats that are of international importance Criterion 8 – Internationally important source of food for fishes, spawning grounds, nursery and/or migration path.	Direct impacts to qualifying habitats and species via releasing contaminants during capital dredging.	No AEoI (Table 25 in APP-115)	None required	No issues raised by IPs
	Criterion 5 – Bird Assemblages of International Importance Criterion 6 – Bird Species/Populations Occurring at Levels of International Importance	Changes to qualifying species resulting from the removal of seabed material during capital dredging.	No AEoI (Table 12 in APP-115)	None required	No issues raised by IPs
	Criterion 5 – Bird Assemblages of International Importance Criterion 6 – Bird Species/Populations Occurring	Effects on qualifying habitats due to potential underwater noise and vibration during piling.	No AEoI (Table 31 in APP-115)	None required	No issues raised by IPs

European site	Qualifying features	Effect pathway	No AEoI alone and in combination	Mitigation required	Agreement with NE
	at Levels of International Importance				
	Criterion 3 – supports populations of plants and/or animal species of international importance Criterion 8 – Internationally important source of food for fishes, spawning grounds, nursery and/or migration path.	Effects on qualifying species due to potential underwater noise and vibration during dredging.	No AEoI (Table 32 in APP-115)	None required	No issues raised by IPs (criterion 8) NE agree with conclusion in relation to grey seal (criterion 3) see ID24 in AS-015
	Criterion 1 – natural wetland habitats that are of international importance	The introduction and spread of non-native species during construction.	No AEoI (Table 33 in APP-115)	The implementation of a Biosecurity Plan included within the Offshore CEMP.	NE agree with conclusion (ID21 in AS-015
	Criterion 1 - natural wetland habitats that are of international importance	The introduction and spread of non-native species during construction.	No AEoI (Table 34 in APP-115)	The Applicant's existing biosecurity management procedures	No issues raised by IPs.

5.39 The ExA noted that for the impact pathways identified in Table 4 (above) NE agreed that AEoI could be ruled out on the identified qualifying habitat and species features of the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site and agreed with those conclusions [ER Appendix C 1.4.26]. The Secretary of State concurs with that conclusion.

5.40 Several effect pathways were concluded by the Applicant as having no AEoI from the Proposed Development on the qualifying features of the European sites but were disputed and then resolved during the Examination. Table E within the Recommendation Report summarised these pathways and associated disputes. These pathways are discussed below by the Secretary of State and she agrees with the conclusions drawn of no AEoI on any Humber Estuary designated sites as a result of the Proposed Development [ER Appendix C 1.4.27].

Consideration of where no AEoI was disputed but resolved during Examination

5.41 The following section considers the impact pathways for which the Applicant had concluded no AEoI but IPs raised concerns that were resolved during Examination (ER Table E).

Humber Estuary SAC and Humber Estuary Ramsar site

Changes to qualifying habitats as a result of sediment deposition during capital dredging

5.42 The Applicant's first HRA (APP-115) provides the general scientific context of the potential impacts to qualifying habitats as a result of sediment deposition during capital dredging (paragraphs 4.4.26 to 4.4.29). Primarily these effects are smothering arising from the suspended sediments during the marine works, dredging and disposal. The potential for smothering or blanketing of benthic species may cause stress, reduced rates of growth and reproduction and in the worst cases the effects may be fatal (paragraph 4.4.26).

5.43 If the amount of sedimentation deposited is too great to allow species to survive burial then recovery occurs by re-colonisation and/or migration to the new sediment surface. The rate of recovery is dependent upon just how stable and diverse the assemblage was in the first place. A regularly disturbed sedimentary habitat with a low diversity benthic assemblage is likely to recover more quickly (i.e., return to its disturbed or 'environmentally-stressed' baseline condition) than a stable habitat with a pre-existing mature and diverse assemblage (APP-115, paragraph 4.2.28).

5.44 The project specific intertidal survey recorded a community characterised by nematodes, the oblgochates, the mud shrimp, the gastropod mudsnail, Baltic tellin and the polychaetes. The subtidal survey indicated that the benthic community were impoverished, characterised by nematodes, the mud shrimp. polychaetes, oligochaetes, gastropods and barnacles. These characterising species dominated the assemblage and contributed almost entirely to the total abundances of organisms recorded at most of the sample stations. These are reflected in the existing high levels of physical disturbance in the area due to the strong near bed

tidal currents and sediment transport and ongoing maintenance (APP-115, paragraph 4.4.31). Evidence was provided, from other research, (APP-115 4.4.29) that the benthic communities have the resilience to tolerate sediment depositions of that greater (5 – 20cm) than that predicted by the Applicant's assessment (7 – 8mm). The species recorded in the benthic invertebrate surveys are known to be fast growing and/or have rapid reproductive rates which allow populations to fully re-establish in typically 1 – 2 years and for some species within a few months (APP-115, paragraph 4.2.32).

5.45 The Applicant explains that sediment deposition as a result of capital dredging will be highly localised and similar to background variability. The Applicant considered that the subtidal and intertidal habitats within the vicinity of the proposed works are considered to have a low sensitivity to smothering and these subtidal and intertidal benthic communities are well adapted to survival under fluctuating sediment conditions and have high recoverability rates. As such, the Applicant considered that mitigation was not required for this impact pathway and concluded that there was no potential for AEoI on the qualifying interest features as a result of this pathway (APP-115, paragraphs 4.4.33 to 4.4.35, Table 13).

5.46 In its response to RIES Q12 regarding the potential for an AEoI due to changes to qualifying habitats as a result of sediment deposition during capital dredging, NE stated that this impact pathway would not result in AEoI [ER Appendix C Table E]. The Secretary of State is satisfied that based on the information provided that AEoI can be ruled out from changes to qualifying habitats as a result of sediment deposition during capital dredging on the qualifying features of the Humber Estuary SAC and Humber Estuary Ramsar site.

Humber Estuary SAC and Humber Estuary Ramsar site

Changes to qualifying habitats as a result of the removal of seabed material during maintenance dredging

5.47 The scientific evidence on this impact pathway is provided in paragraphs 4.4.2 to 4.4.4 (APP-115, paragraph 4.4.44). Maintenance dredging causes direct physical removal of marine sediments from the dredge footprint and can result in modifications of the existing marine habitats. The impacts to benthic fauna associated with the dredged material include changes to the abundance and distribution through damage, mortality and relocation to a disposal site (APP-115, paragraph 4.4.45).

5.48 The Applicant anticipates the operational phase approximately three to four maintenance dredging and disposal to occur per year (APP-115, paragraph 4.4.46). Dredging is not required around the jetties, but the maintenance dredging of the berth pockets is expected to cause ongoing seabed disturbance, albeit in these localised areas. Maintenance dredging will create similar seabed sedimentary conditions to that following capital dredging due to sediment accretion (APP-115, paragraph 4.4.47).

5.49 As noted above, the project specific subtidal surveys indicated that the benthic community is impoverished reflecting the existing high levels of physical disturbance

in the area due to strong bear bed tidal currents and sediment transport (APP-115, paragraph 4.4.47). All of the species recorded are commonly occurring not protected with the faunal assemblage recorded being considered characteristic of the subtidal habitats found more widely in this section of the Humber Estuary (APP_115, paragraph 4.4.48).

5.50 The Applicant considered that the subtidal habitats subject to disturbance by maintenance dredging are of low ecological value and the benthic community has a low sensitivity to seabed disturbance given the high recoverability rates. As such, the Applicant considered that mitigation was not required for this impact pathway and concluded that there was no potential for AEoI on the qualifying interest features as a result of this pathway (APP-115, paragraphs 4.4.49 – 4.4.51; Table 15).

5.51 In its response to RIES Q12 relating to the potential for an AEoI due to changes to qualifying habitats as a result of the removal of seabed material during maintenance dredging, NE stated that this impact pathway would not result in AEoI [ER Appendix C Table E]. The Secretary of State is satisfied that based on the information provided that AEoI can be ruled out from changes to qualifying habitats as a result of the removal of seabed material during maintenance dredging on the qualifying features of the Humber Estuary SAC and Humber Estuary Ramsar site.

Humber Estuary SAC

Physical change to qualifying habitats from dust emissions resulting in smothering to qualifying habitats during construction

5.52 The potential for LSE as a result of dust smothering during construction was identified at Stage 1 screening for the marine habitat mudflats and sandflats not covered by seawater at low tide in the Applicant's second HRA Report (REP5-020, paragraph 4.7.1) following concerns raised by IPs [ER Appendix C 1.1.12].

5.53 This habitat is within the footprint of the jetty and jetty access road construction. The Applicant notes that this habitat is subjected to regular tidal inundation and that any dust deposited would be washed away at high water and would be present only for a short time. As such, any habitats and species present would not be reasonably detrimentally affected by the dust deposition. The Applicant further explains that with the implementation of standard dust suppression measures during construction to minimise fugitive dust emissions would reduce the magnitude and extent of any dust emissions during construction. It is noted that the Applicant concluded that this impact pathway would not result in any adverse effects on habitats and thus the integrity of the designated site (REP5-020, paragraph 4.7.2)

5.54 The Applicant considered that mitigation was not required for this impact pathway and based on the evidence provided the predicted effects would not compromise any of the conservation objectives and concluded that there is no potential for AEoI on the qualifying interest features (REP5-020, Paragraphs 4.7.3 – 4.7.4; Table 20).

5.55 In its response to RIES Q12 relating to the potential for an AEoI due to physical changes to qualifying habitats resulting from dust deposition during construction, NE agreed with the conclusion that this impact pathway would not result in AEoI [ER

Appendix C Table E]. The Secretary of State is satisfied that based on the information provided that AEoI can be ruled out from physical change to qualifying habitats resulting from dust deposition during construction on the qualifying features of the Humber Estuary SAC.

Humber Estuary SAC and Humber Estuary Ramsar site

Physical change to qualifying habitats resulting from the deposition of N and NOx from marine vessel and road vehicle emissions during operation

5.56 Following concerns raised by NE regarding the methods and approach taken by the Applicant in its air quality assessment relating to the habitat types, impacts assessed and the thresholds applied the Applicant confirmed the habitat types and the thresholds applied in its relevant representation (REP1-013) and in the SoCG (REP6-010). These clarifications were reflected in the Applicant's second HRA Report (REP5-020).

5.57 The general scientific context and approach taken in the air quality assessment was described in paragraphs 4.7.5 to 4.7.11 of the second HRA Report. The Applicant confirmed that the habitats assessed were 'Atlantic salt meadows (*Glauco-Puccinellietallia maritimae*)' and 'Mudflats and sandflats not covered by seawater at low tide' for the Humber Estuary SAC and Ramsar Criteria 1 'Natural wetland habitats that are of international importance' for the Humber Estuary Ramsar site.

5.58 The Secretary of State is satisfied that based on the information provided that AEoI can be ruled out from physical change to qualifying habitats resulting from the deposition of N and NOx from marine vessel and road vehicle emissions during operation.The Applicant reviewed the air pollution information available for the habitats on the Air Pollution Information System (APIS) website. APIS information indicated that for the 'Estuaries' and 'Atlantic salt meadows' the nitrogen critical load (NCLo) is 20-30 kgN/ha/yr (REP5-020, paragraph 4.7.7). For Estuaries, APIS states that NCLo for estuary habitat applies to the saltmarsh component for the feature. The Applicant used this value for screening. APIS states that the 'sandbanks which are slightly covered by sea water all of the time' is not susceptible to nitrogen (N) and ammonia (NH_3) deposition and therefore these habitats were screened out at Stage 1 because no pathway for LSE for these pollutants were identified (REP5-020, paragraph 4.7.8).

5.59 For 'Mudflats and sandflats not covered by seawater at low tide' APIS also stated that there is no appropriate critical load for unvegetated mudflats and sandflats. The Applicant further explained that the critical levels (CLe) for NOx and NH_3 are based on studies into the effects of these chemicals on rooted macrophytes and are therefore not appropriate for entirely unvegetated habitats i.e. areas of estuary that are not saltmarsh (REP5-020, paragraph 4.7.9).

5.60 The Applicant used the Environment Agency 2016 guidance (updated 2021) which states that impacts may be considered insignificant ('not significant') where:

- The short-term impact is less than 10% of environmental assessment level for the nature conservation site; and

- The long-term impact is less than 1% of long-term air quality objective or environmental assessment level for the nature conservation site (REP5-020, paragraph 4.7.10).

5.61 Where the long-term impact at a nature conservation receptor exceeds these criteria, it may also be considered insignificant ('not significant') where:

- The long-term total concentration after the impact is <70% of the air quality objective or environmental assessment level for the nature conservation site (REP5-020, paragraph 4.7.11).

5.62 The Applicant's air quality assessment of the operational conditions of the Proposed Development at nature conservation sensitive receptors were summarised as follows:

- Annual mean NOx concentrations predicted are below the air quality objective at the saltmarsh habitats within the SAC;
- The impact of the operational onsite conditions emissions is greater than 1% of the air quality objective for annual mean NOx at some sections of the saltmarsh habitat within the SAC (receptor ID SAC3, SAC4 and SAC5) and cannot be screened as insignificant;
- N deposition rates at the saltmarsh habitat within the SAC are close to or are above the relevant CLo for that habitat (exceeds at SAC1 only); and,
- The impact of operational onsite emissions is less than 1% of the NCLo at the saltmarsh habitat within the SAC (REP5-020, paragraph 4.7.15).

5.63 The Applicant's assessment for the operational stage demonstrated that the effect of the combined emissions of the onsite emission NOx sources is below the air quality objective but exceeds the 1% threshold at three locations but the total NOx is below 58%. The annual mean NOx concentrations remain below 70% of the air quality standard and therefore the effect of emissions on coastal saltmarsh within the Humber Estuary SAC is considered negligible. The Applicant further explains that N deposition should also be considered within the context of nutrient loadings from river and tidal inputs which are likely to be of significantly greater importance for these systems (REP5-020, paragraphs 4.7.16 and 4.7.17).

5.64 The Applicant's assessment noted at the same five SAC receptors that the predicted NH_3 and NH_3 derived N deposition are below 1% of the CLe at all receptors and LSE was screened out at Stage 1 (REP5-020, paragraph 4.7.19).

5.65 The Applicant considered that mitigation was not relevant to this impact pathway (REP5-020, paragraph 4.7.20). Based on the evidence provided the Applicant considered the predicted effects would not compromise any of the conservation objectives and concluded that there was no potential for AEoI on the qualifying interest features as a result of this pathway (REP5-020, paragraph 4.7.21).

5.66 The Applicant explained (REP8-020) why in combination modelling was not undertaken, in response to ExA's fourth written questions BNE.4.11. In its response to the ExA's fourth written questions NE (REP9-018) agreed that the appropriate

assessment could determine no AEoI from impacts to the Atlantic sale meadows feature both alone and in combination with other plans and projects, despite having some remaining methodological concerns stating that "*we do not consider that this would materially impact [the] conclusions of the Stage 2 assessment on adverse effects on integrity*" [ER Appendix C Table E].

5.67 The Secretary of State is content that assessment is sufficient to rule out AEoI physical change to qualifying habitats resulting from the deposition of N and NOx from marine vessel and road vehicle emissions during operation on the relevant qualifying features of the Humber Estuary SAC and Humber Estuary Ramsar site.

Humber Estuary SAC and Humber Estuary Ramsar site

Effect on qualifying habitats and species due to elevated SSC during capital dredging and capital dredge disposal during construction and operation

5.68 The Applicant provided the general scientific context of the impacts from capital dredging and capital dredge disposal for benthic habitats and species in paragraphs 4.8.1 to 4.8.10 in its first HRA Report (APP-115).

Capital dredge

5.69 Dredging activities result in the suspension of disturbed sediment. Macrofauna living in estuarine systems which are subject to high levels of SSC are considered well adapted to living in highly turbid conditions. Increased food availability occurs if the additional suspended sediment contained a significant proportion of organic matter, thereby favouring surface deposit feeders, such as some polychaetes (APP-115, paragraph 4.8.1) Increased suspended sediment levels may favour the development of suspension feeders, such as bivalves and other species. Though many benthic invertebrates can switch feeding modes depending on environmental conditions (APP-115, paragraph 4.8.4).

5.70 Higher particle loads can also have negative effects, such as reduced visibility, greater energetic costs and increased abrasive activity in flowing water (APP-115, paragraphs 4.8.2 and 4.8.3). Suspended sediments may be particularly important during larval settlement in spring with the settling stages being potentially more sensitive to scouring. Though this is generally thought to be of less concern where fauna are adapted to naturally high levels of suspended sediments (APP-115, paragraph 4.8.4).

5.71 The Applicant describes potential impacts from oxygen depletion within the water column. It can occur from the resuspension of sediments containing organic matter. The subsequent settling of this organic rich sediment can deplete oxygen levels in sediment, potentially affecting benthic species. Reductions in dissolved oxygen from suspended sediments due to dredging are generally considered to be minimal and short-lived. If dredging causes the disturbance of high levels of oxygen depleting substances in some very fine-grained sediment deposits and where a great portion originate from waste water then the potential effects can be more pronounced (APP-115, paragraph 4.8.5).

5.72 In severe conditions oxygen depletion can lead to hypoxia. This is when oxygen is consumed faster than it is replenished. The Applicant explains that coastal and estuarine waters can be particularly susceptible to low oxygen conditions as the sediments are organic-rich and impose high sediment oxygen demands. Highly stratified estuaries, where the surface and bottom waters do no mix, are more prone to hypoxia. Such severe events can lead to shifts in community composition (APP-115, paragraph 4.8.6).

5.73 The Applicant's first HRA states (APP-115) that changes in SSC are predicted to occur due to capital dredge will be localised and temporary. The Humber Estuary has naturally high SSC year-round, particularly during winter months when storm events disturb the seabed and on spring tides. The estuarine benthic communities recorded on mudflats and the shallow mud occur commonly in this region and are considered tolerant to this highly turbid environment. The predicted SSC in the Applicant's assessment is noted to be within the range that can frequently occur naturally and also as a result of ongoing dredge and disposal activity. It is noted that increases in SSC will be brief and localised with any reduction in dissolved oxygen not expected to be significant nor therefore any implications for benthic species and habitats (APP-115, paragraphs 4.8.11 to 4.8.13).

5.74 Migratory fish, including lamprey are known to migrate through estuaries with high SSC to get to spawning areas, including the Humber Estuary. The Applicant refers to research papers that indicate that the Humber Estuary is considered to have some of the highest levels of SSC in the UK. The Applicant considered the elevated levels of SSC due to dredging to be of a magnitude that can occur naturally or as a result of ongoing maintenance dredging/disposal. The sediment plumes from dredging are expected to be relatively localised, dissipate relatively rapidly and be immeasurable against background levels within a relatively short duration of time. The Applicant explains that salmonids and other migratory fish will be able to avoid the temporary sediment plumes (APP-115, paragraphs 4.8.14 to 4.8.15).

5.75 It is argued that given the elevated SSC from dredging is considered to be in the range of variability that can occur naturally in the Humber Estuary as well as from ongoing maintenance dredging/disposal and that the plumes will be temporary, sensitive life stages of fish occurring in the regions such as larvae and juveniles are considered unlikely to be adversely affected by dredging. Furthermore, as the increases in SSC will be brief and localised a reduction in dissolved oxygen is not expected and therefore a response by fish is not expected (APP-115, paragraphs 4.8.11 to 4.8.17). Mitigation is not considered to be relevant to this impact pathway and based on the evidence provided the predicted effects are not considered to compromise any of the conservation objectives, and it is concluded that there is no potential for AEoI on qualifying interest features as a result of this pathway (APP-115, paragraphs 4.8.18 and 4.8.19). The Secretary of State agrees that based on the information provided AEoI can be ruled out due to elevated SSC during capital dredging during construction and operation on the qualifying habitats and species of the Humber Estuary SAC and Humber Estuary Ramsar site.Capital dredge disposal

5.76 The scientific evidence on this impact pathway is provided in paragraphs 4.8.1 to 4.8.10 (APP-115, paragraph 4.8.20). The Applicant summarised the effects on benthic habitats and species in paragraphs 4.8.21 to 4.8.24 of their first HRA Report (APP-115).

5.77 The peak SSC during dredge disposal is predicted to be 600 to 800mg/l above background values at the disposal site. This is predicted to be 100 to 200mg/l within a distance of 7km from source. These peak increases are predicted to be relatively short lived of about 10 minutes (i.e. a single modelled timestep) at any given location before the tidal force carries the plume further up or down estuary on the flood or ebb tide. The Applicant explains that due to the existing high SSC that typically occurs in the Humber Estuary the increases predicted due to disposal is likely to become immeasurable against background within approximately 1km of the disposal site. The Applicant further explains that the measurable plume from disposal operation is likely to persist for a single tide cycle only, of less than 6 hours from disposal. After this time dispersion under the peak flood and ebb tidal flows means that concentrations will have reverted to background levels (APP-115, paragraph 4.8.21).

5.78 As mentioned above (paragraph 5.74), the Humber Estuary has naturally high SSC year-round and particularly during the winter months when storm events disturb the seabed and on spring tides. The Applicant noted that the benthic communities recorded within the disposal grounds and surrounding area were of low ecological value but are considered characteristic of the qualifying feature 'Sandbanks which are slightly covered by sea water all of the time' feature. As noted above (paragraph 5.74) the benthic communities are considered to be tolerant to this highly turbid environment and have low sensitivity to increases in suspended sediments. The predicted SSCs are within the range that can frequently occur naturally and also as a result from ongoing dredge and disposal activity (APP-115, paragraph 4.8.22).

5.79 The Applicant acknowledged that the sediment disposal would temporarily increase SSC but due to the high strong hydrodynamic conditions in the area, the temporary elevations in SSC would be expected to dissipate rapidly to background concentrations. As the increases in SSC are predicted to be brief and localised the reduction in dissolved oxygen is not expected to be significant and therefore no implications for the benthic species and habitats.

5.80 The Applicant considered the impact from capital dredge disposal to be the same as for capital dredging, as described above at paragraphs 5.94 to 5.95.

5.81 The Applicant did not consider mitigation relevant for capital dredge and capital dredge disposal. Based on the evidence and rationale provided the Applicant considered the potential impacts would not compromise any of the conservation objectives and concluded no AEoI on qualifying interest features as a result of this pathway (APP-115, paragraphs 4.8.25 and 4.8.26).

5.82 Initial concerns raised by NE were resolved in Paragraph 2.5.2 and ID 20 of its written representation (REP2-019) [ER Appendix C Table E] that "*after review of the information provided by the Applicant in the ES and HRA, NE is satisfied that the matter is resolved*" and agreed with the conclusion of no AEoI.

5.83 The Secretary of State agrees that based on the information provided AEoI can be ruled out due to elevated SSC during capital dredging and capital dredge disposal during construction and operation on the qualifying habitats and species of the Humber Estuary SAC and Humber Estuary Ramsar site.

Effect on qualifying species due to potential underwater noise and vibration during piling

5.84 The Secretary of State addressed this issue above under "Vibro-piling and underwater noise: Marine mammals and Fish" at paragraphs 5.27 to 5.38 of this Report.

Humber Estuary SPA and Humber Estuary Ramsar

Direct loss of supporting intertidal habitat on qualifying species from capital dredging and piling during the construction phase

5.85 The Applicant set out the general scientific context in its first HRA Report at paragraphs 4.3.12 to 4.3.13. The quality of intertidal feeding habitat as a feeding resource for waterbirds can be highly variable both spatially and temporally. Where habitat change has caused a reduction in prey distribution and density, this can lead to increased energetic costs for waterbirds. Loss of habitat can also lead to increased bird densities in the area leading to increased potential for interference competition. The loss of intertidal habitat could displace birds and cause them to redistribute either locally or to neighbouring sites. This, in turn, might affect birds at those sites through competition and density-dependent mortality.

5.86 The Proposed Development would result in the direct loss of 0.012ha of intertidal habitat in terms of its functional value to foraging bird features of the SPA and Ramsar due to capital dredging and the piles. The Applicant calculated that habitat loss would be 0.000032% in totality of the SPA/Ramsar. In the context of intertidal area this loss represents approximately 0.000135% and 0.000188% of intertidal foreshore habitats and mudflat respectively. The predicted intertidal losses from capital dredging consist of narrow strips on the lower shore around the sublittoral fringe. The Applicant considered these losses to be of a similar scale to that occurring through natural background changes in mudflat extent in the local region. The habitat loss through piling was expected also to be highly localised. The Applicant noted that these changes in mudflat extent would not change the overall structure or function of nearby mudflats within the PoI or more widely in the Humber Estuary. The Applicant's observations were that the predicted direct areas of intertidal habitat loss were only exposed during low water spring tide phases being completely submerged for over 99% of the time thereby providing almost no feeding opportunities for coastal waterbirds (APP-115, paragraphs 4.3.14 to 4.3.18).

5.87 Following RIES Q21, the Applicant quantified the extent of in combination effects wherever possible and included in revised tables in its third HRA Report (REP7-014, Tables 38 and 39). In combination with the IGET the total loss of intertidal habitat is anticipated to be 0.044ha which represents 0.000117% of the SPA/Ramsar. This equates to approximately 0.000495% and 0.00069% of intertidal foreshore habitats and mudflat respectively [ER Appendix C Table E].

5.88 Based on this information the Applicant concluded that any changes to prey resources for birds feeding in the local area would be negligible and individual survival rates or local population levels would not be affected. As such, mitigation was not considered relevant for this impact pathway. The Applicant considered that the predicted effects would not compromise the conservation objectives and that there would be no AEoI on the qualifying interest features as a result of this pathway (APP-115, Paragraphs 4.3.19 to 4.3.21).

5.89 NE confirmed that it agreed with the Applicant's conclusions that there would be AEoI on the SPA/Ramsar features resulting from direct and indirect loss of supporting habitat in its response to ExA's question BNE4.05 (REP9-018)

5.90 The Secretary of State is satisfied that AEoI can be ruled out from direct loss of supporting intertidal habitat on qualifying species from capital dredging and piling for the qualifying features of the Humber Estuary SPA and Humber Estuary Ramsar.

Humber Estuary SPA and Humber Estuary Ramsar

Effect on qualifying species due to changes to waterbird foraging and roosting habitat as a result of the presence of marine infrastructure during operation

5.91 The Applicant clarified that this pathway relates to potential changes to foraging and roosting habitat as a result of the physical presence of the marine infrastructure and not human activity on the infrastructure (APP-115, Paragraphs 4.3.29 to 4.3.30). The Applicant acknowledged that such effects are likely to be interrelated to some extent (APP-115) .

5.92 The general scientific context was set out by the Applicant in paragraphs 4.3.31 to 4.3.34 of the first HRA Report (APP-115). It was explained that waterbirds prefer to forage in open spaces with clear sightlines so that scanning distances can be maximised when feeding and certain species of coastal waterbirds are reluctant to approach tall anthropogenic structures or those that create enclosed spaces. Essentially waterbirds are trying to avoid any sudden attacks from predators that may be hiding in or behind the structure. The Applicant also notes that anthropogenic structures can also provide new habitat for colonising epibiota which are often prey items for certain wading birds. Coastal waterbirds have also been reported to roost on various artificial structures in harbours and ports (e.g. pontoons, platforms, sea walls, mooring structures).

5.93 Following NE's request (AS-015) for a more detailed assessment of the impact on key species, particularly regarding observed distances. NE considered that there was a risk of loss of ecological function for waterbirds and this required assessment within the HRA Report. The Applicant provided further information in its second HRA Report (REP5-020) [ER Appendix C Table E]. The Applicant considered that the marine infrastructure associated with the Proposed Development would not prevent direct access to established roosting habitat used by coastal waterbirds in the area. Turnstone is the only SPA bird feature that was screened into the Appropriate Assessment recorded to use such structures. This species is considered to be very tolerant to potential disturbance and would be expected to continue to use the structures during construction. Turnstone were recorded by the Applicant using

other structures for roosting and feeding in the area and therefore it was considered that was a wide variety of alternative structures in the area for this species to use (REP5-020, paragraph 4.3.35).

5.94 The Applicant notes that the approach jetty will be an open piled structure with large gaps between each pile and between the jetty deck and foreshore seabed thus minimising the enclosed feel and allowing birds feeding near the structure to maintain sightlines. Ornithological surveys in the area suggest that birds regularly feed in very close proximity to both the Eastern Jetty and the Immingham Oil Terminal approach jetty, both of which are similarly open piled structures. Redshank, Dunlin and Turnstone have been regularly recorded underneath the jetties and Curlew, Shelduck and Black-tailed Godwit approaching them relatively closely. The Applicant considered that birds would be expected to show similar highly localised responses to structures associated with the Proposed Development with responses ranging from no avoidance to local avoidance for different species. The Applicant further considered that this was unlikely to change the overall distribution of waterbirds more widely along the foreshore fronting Immingham. Seasonality did not seem to influence the proximity of birds feeding as numbers nearby the structures were comparable to those further away (REP5-020, paragraph 4.3.36).

5.95 The Applicant's ornithological survey results show that bird densities using the mudflat enclosed by the Eastern Jetty were similar to that using the open area of mudflat to the east of the pipeline connecting the Eastern Jetty. It was considered that the birds were already habituated to feeding in areas of mudflat enclosed by the infrastructure as the same local waterbird populations use the area around the Eastern Jetty and the foreshore area around the Proposed Development. The Applicant also noted that the height of the proposed jetty and the distances between the piles will be greater than the pipeline jetty connecting the Eastern Jetty. Therefore, the Applicant considered that the mudflat enclosed by the Proposed Development's jetty would be less restrictive and allow feeding birds to maintain sightlines (REP5-020, paragraphs 4.3.40 and 4.3.41)

5.96 The Applicant considered that birds would be expected to feed below or very close to the Proposed Development's approach jetty and other infrastructure on the foreshore, none of which would prevent direct access to established roosting habitat. Furthermore, any avoidance of marine infrastructure would be expected to be limited and highly localised and unlikely to change the overall distribution of waterbird assemblages more widely on the foreshore in the local area (REP5-020, paragraph 4.3.42).

5.97 Based on that rationale the Applicant did not consider mitigation was required for this impact pathway and that the predicted effects were not considered to compromise any of the conservation objectives of the European sites. The Applicant concluded that there was no potential for AEoI on qualifying interest features as a result of this pathway (REP5-020, paragraphs 4.3.43 and 4.3.44).

5.98 Following these changes in the second HRA Report (REP5-020), NE was reassured that birds would continue to use the area around the new jetty and confirmed that it

agreed with the Applicant's conclusion of no AEoI on the qualifying interest features of the Humber Estuary SPA and Humber Estuary Ramsar (ER Appendix C Table E).

5.99 The Secretary of State is satisfied that AEoI can be ruled out from changes to waterbird foraging and roosting habitat as a result of the presence of marine infrastructure for the qualifying features of the Humber Estuary SPA and Humber Estuary Ramsar.

Humber Estuary SPA and Humber Estuary Ramsar

Effect on qualifying species due to potential airborne noise and visual disturbance during operation

5.100 The Secretary of State addressed this issue above under "Airborne noise and visual disturbance" at paragraphs 5.46 – 5.49 of this Report.

The Wash and North Norfolk Coast SAC

Sources of underwater noise

5.101 The only pathway that was progressed to Stage 2 Appropriate Assessment was sources of underwater noise and vibration on the harbour [common] seal. The issues relating to the harbour [common] seal feature for The Wash and North Norfolk Coast SAC are the same as for the grey seal feature of the Humber Estuary SAC and Humber Estuary Ramsar site (see paragraphs 5.25 to 5.28 of this Report).

5.102 The ExA requested in its fourth written questions (ExQ BNE4.07) that the Applicant provide an in combination assessment for all relevant pathways for The Wash and North Norfolk Coast SAC which was not included in the third HRA Report (REP7-014). The updated fourth HRA Report (REP8-014) contained a revised Table 37 that addressed the request.

5.103 The Applicant concluded that there are no AEoI on the qualifying interest of The Wash and North Norfolk Coast SAC. In its response to EXQ4 NE agreed that "*On the basis of the information supplied throughout the examination, Natural England agree that AEoI can be excluded both alone and in combination*" from underwater noise effects from piling, capital and maintenance dredging and disposal during construction and operation [ER Appendix C Table E].

5.104 Based on the information provided the Secretary of State is satisfied that AEoI can be ruled out from underwater noise effects from piling, capital and maintenance dredging and disposal during construction and operation for the relevant qualifying feature of The Wash and North Norfolk Coast SAC.

5.105 The Secretary of State notes that the ExA agreed with the conclusions listed in Table E of its Recommendation Report of no AEoI [ER Appendix C 1.4.28] and finds no reason to disagree.

Consideration of where no AEoI was disputed and not resolved at end of Examination

5.106 The following section reviews the matters of disagreement between the Applicant's conclusion of no AEoI in relation to the European sites and their qualifying features and other IPs. The Secretary of State notes that these matters were not resolved at the end of Examination [ER Appendix C 1.4.29].

5.107 The Proposed Development would be sited within the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site. The Secretary of State has reviewed the information provided and structured her assessment around the potential effect pathways that were disputed during Examination.

Humber Estuary SAC

5.108 The qualifying features for which the site was designated are listed in Annex 2 of this HRA Report. However, only the following qualifying features were taken forward for consideration of AEoI [ER Appendix C 1.4.30]:

- Sandbanks which are slightly covered by sea water all of the time;
- Estuaries;
- Mudflats and sandflats not covered by seawater at low tide;
- Atlantic salt meadows *Glauco-Puccinellietalia maritimae*;
- Sea lamprey *Petromyzon marinus*;
- River lamprey *Lampetra fluviatilis*; and
- Grey seal *Halichoerus grypus*.

Physical loss of habitat

5.109 The Applicant's final HRA Report (REP8-014) presents the assessment for the physical loss of habitat and associated species alone (section 4.3) and in combination (section 4.13) effects (ER Appendix C 1.4.32).

Mudflats and sandflats not covered by seawater at low tide (intertidal habitat)

5.110 The direct loss of intertidal habitat due to capital dredging and piling on this qualifying feature was estimated to be 0.012ha. Capital dredging would account for 0.006ha of intertidal habitat (which would become subtidal habitat due to deepening) and 0.006ha of intertidal mudflat habitat from piling. The Applicant estimated this loss to be 0.000033% of the total SAC footprint. For the 'mudflats and sandflats not covered by seawater at low tide' qualifying feature the habitat loss was estimated to be 0.000128% and was considered to be comparable to the annual natural background changes in mudflat extent, estimated at 0.3ha. The Applicant concluded that the Proposed Development alone would not have AEoI on the mudflats and sandflats habitats on the basis that the loss of intertidal habitat would be '*de minimis*' in extent and negligible in the context of the amount of similar habitat in the region. Mitigation was not proposed (ER Appendix C 1.4.34 to 1.4.36].

Estuaries (subtidal habitat)

5.111 The potential for AEoI from the direct loss of qualifying subtidal habitat of the 'estuaries' qualifying feature due to piling was assessed. Direct loss of the subtidal seabed was estimated to be 0.0032ha, representing 0.000087% of the SAC. The Applicant concluded that there would be no AEoI from the Proposed Development alone stating that the loss would be inconsequential and insignificant in terms of the conservation objectives. No mitigation was proposed [ER Appendix C 1.4.37].

5.112 For both of these habitats, NE considered a conclusion of no AEoI could be drawn for the direct losses of intertidal and subtidal habitats from the Proposed Development alone (AS-015) [ER Appendix C 1.4.38].

5.113 In relation to in combination effects, NE considered that further information to support the conclusions of no AEoI in combination with other plans/projects. In response to ExQ1 BNE.1.17 NE explained that it sought further information on the scope of the in combination assessment and it considered that the in combination assessment should include relevant projects or plans within East Riding of Yorkshire, North Lincolnshire and North East Lincolnshire Council areas, including the IGET. This matter was extensively considered during the Examination by the Applicant and NE. The Applicant submitted its third HRA Report (REP7-014) in response to RIES Q21 to quantify the extent of in combination effects wherever possible and that update was included in Tables 37, 38 and 39. Table 37 of the third HRA Report indicated that the anticipated total loss of intertidal habitat to be 0.044ha, representing 0.000120% of the SAC and approximately 0.000469% of the 'mudflats and sandflats not covered by seawater at low tide' feature of the SAC. Furthermore, the Applicant in Table 37 estimated that marine piling would result in a combined loss of subtidal habitat of 0.083ha representing approximately 0.000226%) of the SAC [ER Appendix C 1.4.38 to 1.4.39].

5.114 Following these in combination updates and at close of Examination, NE maintained its position that AEoI could not be ruled out in combination with other plans and projects for both the 'mudflats and sandflats not covered by seawater at low tide' and 'estuaries' qualifying features of the SAC. In its response to EX Q4 (REP9-018) NE [ER Appendix C 1.4.40]:

- Acknowledged that the area of intertidal loss from the Proposed Development and IGET combined would be a small percentage of the SAC.
- Stressed that the intertidal mudflats and sandflats features and estuaries sub-features all have a "*restore*" conservation objective for habitat extent and distribution, due to existing pressures. NE stated that mitigation for habitat loss was not possible at appropriate assessment because any loss within the NSN habitat is therefore likely to have AEoI unless that loss can be demonstrated to be ecologically inconsequential. NE considered the Applicant had not provided sufficient evidence to demonstrate that the in combination loss of habitat would be ecologically inconsequential because the area due to be lost was not "*impoverished*", with the number of birds present indicating the area was not of low ecological value.
- Referred to other anthropogenic pressures already operating or under construction across a considerable proportion of the Humber Estuary SAC, i.e.

Able Marine Energy Park (AMEP), Stallingborough 3 flood risk management scheme and other planned activities (e.g. IGET and the proposed Humber Low Carbon Pipelines).

5.115 The Applicant disagreed with NE regarding the value of the habitat (i.e. "*impoverished*") but agreed that the wider mudflat was not of negligible ecological value for its foraging resource. The Applicant argued that the predicted intertidal habitat loss relating to capital dredge (direct) and changes in hydrodynamics (indirect) comprise of narrow strips on the lower shore around the sublittoral fringe that currently provided almost no feeding opportunities for coastal waterbirds, being submerged for 99% of the time. The Applicant further contended that the potential loss would be considered to be of a similar scale to that which could occur due to natural background changes in mudflat extent in the local region. The other pressures that NE referred to were considered in the in combination assessment of the HRA Report, the Applicant stressed, and concluded the effects were either insignificant or have already been (or would be) compensated for (in the case of AMEP and Stallingborough 3 flood risk management scheme). It was further argued by the Applicant that if any in combination effects as identified above could not be ruled out and were to arise then the proposed IGET would address any such effects, therefore the Applicant submitted that there would be no need to consider derogation for the Proposed Development [ER C.1.4.41 to C.1.4.42].

5.116 The Secretary of State notes that the ExA considered that there would be no AEoI from the Proposed Development alone on the qualifying intertidal ('mudflats and sandflats not covered by sea water at low tide') habitat and subtidal ('estuaries') habitat of the Humber Estuary SAC. The Secretary of State notes that NE considered that "*it is likely that the conclusion of no AEoI may be drawn for the small loss of SAC habitat at the 'alone' stage of the assessment*" (AS-015 and above at paragraph 5.113). The ExA was of the view, based on evidence from NE (REP9-018) that there was insufficient evidence to recommend that AEoI can be ruled out beyond scientific doubt arising from the Proposed Development in combination with other plans and projects, in particular the proposed IGET [ER Appendix C 1.4.43].

5.117 Following the Secretary of State's consultation (9 July 2024), NE stated (23 July 2024) that the only other project (excluding IGET) that could potentially act in combination would be the Humber Stallingborough Phase 3 Defence Improvement Scheme (based on the information provided in the latest shadow HRA for the Proposed Development). NE advised that there were unlikely to be adverse effects on site integrity in combination with the Stallingborough scheme as intertidal habitat loss from this scheme would not affect the ecological functioning of the qualifying feature of 'mudflats and sandflats not covered by seawater at high tide'. Further, NE were satisfied by the information in the updated shadow HRA[2] for the IGET (the Applicant being the same for both the IGET and the Proposed Development) and it agreed with the conclusions of the in combination assessment for physical loss of (or change to) intertidal habitat and further agreed that there is unlikely to be adverse effects on site integrity. Following these updates the Secretary of State notes that

[2] Immingham Green Energy Terminal Shadow HRA. Available at Immingham Green Energy Terminal Volume 7 - July 2024 (planninginspectorate.gov.uk)

NE consider that in combination impacts between the Proposed Development and IGET have been adequately addressed through the IGET project and therefore compensatory measures are no longer required for either project.

5.118 The Secretary of State concurs that AEoI alone from the Proposed Development can be ruled out on the mudflats and sandflats not covered by seawater at low tide and estuaries qualifying habitats of the Humber Estuary SAC.

5.119 In light of the latest consultation with NE, the Secretary of State is content to conclude no AEoI via physical habitat loss in combination with other plans or projects, due to updated information that has come forward since the ExA's Recommendation Report.

Physical damage through disturbance and/or smothering of habitat

5.120 The Applicant's final HRA Report (REP8-014) presents the assessment for the physical damage through disturbance and/or smothering of habitat alone (section 4.4) and in combination effects (section 4.13). The assessment for potential AEoI arising from changes to qualifying habitats as a result of the removal of seabed material during capital dredging related to the 'estuaries' and 'mudflats and sandflats not covered by seawater at low tide' [ER Appendix C 1.4.44 and 1.4.45].

5.121 It was estimated that a maximum of 190,000 cubic metres (m^3) of material would be removed due to capital dredging and would lead to changes for 6.8ha of subtidal habitat directly from the physical removal of subtidal sediment. A change to an estimated 0.003ha of intertidal habitat which would become lower in elevation, but remain intertidal, due to the dredging of the slope of the dredge pocket [ER Appendix C 1.4.46].

5.122 The assessment concluded that the subtidal habitat would be expected to be recolonised relatively rapidly by a broadly similar invertebrate assemblage to baseline conditions. It was asserted by the Applicant that the predicted intertidal habitat change was considered to be in the range of local natural variability and the Applicant considered this to be immeasurable in real terms when taking account of the variation in water levels, wave, climate and accuracy of the modelled bathymetry. Similarly, the Applicant considered that the benthic communities would be expected to recolonise relatively rapidly the area of intertidal change. The Applicant concluded no AEoI on the qualifying features from this pathway [ER Appendix C 1.4.47].

5.123 For both of these habitats, NE considered a conclusion of no AEoI could be drawn for the physical damage through disturbance and/or smothering of intertidal and subtidal habitats from the Proposed Development alone (AS-015).

5.124 Similarly to the direct loss of habitat pathway, NE sought additional information to support the conclusion of no AEoI in combination with other plans and projects [ER Appendix C 1.4.48].

5.125 As mentioned above, the issue of in combination assessment was thoroughly explored during Examination. The third HRA Report (REP7-014) explains that the

IGET capital dredge would remove 4,000m^3 of material over a maximum area of about 10,000 square metres (m^2). For the Proposed Development the capital dredge would remove 190,000m^3 of material over a maximum area of approximately 70,000m^2. The Applicant concluded that for both projects following dredging, it is considered likely that dredge pocket would provide similar substrate for infaunal colonisation to that under pre-dredge conditions which would then be expected to be recolonised by a similar assemblage to baseline conditions. The Applicant predicts that the sedimentation as a result of the capital dredging for both the IGET project and the Proposed Development would be highly localised and similar to background variability. The species recorded for both dredge footprint areas are considered to be tolerant to the predicted millimetric changes in sediment deposition and therefore smothering effects are considered unlikely. Furthermore, the species recorded in the benthic invertebrate surveys are fast growing and/or have rapid reproductive rates and the Applicant considered the populations would be fully re-establish populations in less than two years and for some species a few months [ER Appendix C 1.4.49].

5.126 Following the updates in the Applicant's in combination assessment NE reiterated that AEoI cannot be ruled out in combination with other plans and projects for both the 'mudflats and sandflats not covered by seawater at low tide' feature and the 'estuaries' features of the Humber Estuary SAC [ER Appendix C 1.4.50].

5.127 The Secretary of State is content that AEoI can be ruled out from the Proposed Development alone on the qualifying habitats estuaries and mudflats and sandflats not covered by seawater at low tide of the Humber Estuary SAC.

5.128 The Secretary of State considers in light of the most recent consultation with NE dated 23 July 2024 (as set out above in 5.318) that in combination effects between the Proposed Development and the IGET can be ruled out. As such, AEoI can be excluded beyond reasonable scientific doubt.

Humber Estuary SPA

5.129 The qualifying features for which the site was designated are listed in Annex 2 of this HRA Report. However, only the following qualifying features were taken forward for consideration of AEoI are [ER Appendix C 1.4.52]:

- Common shelduck *Tadorna tadorna* (non-breeding)
- Red knot *Calidris canutus* (non-breeding)
- Bar-tailed godwit *Limosa lapponica* (non-breeding)
- Black-tailed godwit *Limosa limosa islandica* (non-breeding)
- Dunlin *Calidris alpina alpina* (non-breeding)
- Common redshank *Tringa totanus* (non-breeding)
- Waterbird assemblage

Airborne noise and visual disturbance (construction)

5.130 The Applicant's final HRA Report (REP8-014) presents the assessment for potential AEoI for airborne noise and visual disturbance arising from construction activities (section 4.10) and in combination effects (section 4.13) on the SPA features listed above [ER Appendix C 1.4.53].

5.131 The ExA notes that the Applicant's assessment of noise disturbance was based on the use of a 200m potential disturbance zone. The Applicant regarded noise levels of below 55 decibel A-weighted (dBA) to be not significant, while peak noise levels approaching 70dBA and above were considered likely to cause an adverse effect [ER Appendix C 1.4.54].

5.132 The Applicant ranked the SPA qualifying bird species in terms of their sensitivity to disturbance from 'moderate to high', 'moderate', 'low to moderate' and 'low' based on various research. Shelduck and Curlew were considered the most sensitive and Dunlin, Turnstone and Ringed Plover being the least sensitive (Table 28, REP8-014).

5.133 Based on the evidence the Applicant proposed a series of mitigation measures which would be secured through the draft DCO and included in the Offshore CEMP. The mitigation measures include [ER Appendix C 1.4.55]

- winter marine construction restriction between 1 October to 31 March for construction activities associated with the approach jetty, linkspan, innermost pontoon and the inner finger pier;
- noise suppression system for piling on the outer finger pier;
- acoustic barrier/screening on marine construction barges;
- soft starts for all percussive piling activity; and
- cold weather construction restriction.

5.134 The qualifying bird features vary in terms of abundance in the affected area and their sensitivities to anthropogenic disturbance. The Applicant concluded that for all qualifying features that the mitigation measures should limit the potential for disturbance or displacement by reducing exposure to close range visual stimuli and limit exposure to loud noise above background levels. On this basis the Applicant concluded that there would be no potential AEoI for the qualifying interest features [ER Appendix C 1.4.56].

5.135 A number of concerns were raised by NE about the Applicant's assessment. In particular NE objected to the Applicant's use of the Institute of Estuarine and Coastal Studies Waterbird Disturbance Mitigation Toolkit (IECS, 2013) because the results had not been peer reviewed and in NE's view any assessment relying on the toolkit may be inaccurate [ER Appendix C 1.4.57]. NE were also concerned about the baseline data presented and the methodology applied in the assessment, requesting:

- further information for bird usage data by month to indicate the expected number of passage and wintering seasons for SPA birds that would be affected during the construction phase;

- further information providing context for the Sector B bird usage in the form of bird usage data for Immingham Sectors A and C, as well as across the frontage between Goxhill and Pyewipe;
- further information on the importance of Sector B for the Humber Estuary SPA features and the factors contributing to that;
- provision of expected noise levels during piling and other construction activities at 200m and 300m from the source;
- further evidence to demonstrate that a 200m disturbance buffer would be sufficient to mitigate impacts from noise and visual disturbance from construction, particularly for the approach jetty, linkspan, innermost pontoon and inner finger pier;
- further detail on the expected period of each of the main construction activities (e.g. capital dredge, jetty construction, etc.); and when the worst impacts from the construction phase were likely to occur; and
- further assessment around the potential energetic costs to birds as a result of disturbance [ER Appendix C 1.4.58].

5.136 NE argued that the percentage of intertidal mudflat affected by the Proposed Development, within 200m, as a proportion of the estuary resource was not regarded as particularly relevant. The reason being that the area supports important numbers of any SPA bird species and therefore the site of the Proposed Development should be considered as being of high importance [ER Appendix C 1.4.59].

5.137 NE noted that the impacts on feeding and roosting birds needed to be assessed separately including consideration of whether there are other suitable structures available for roosting and whether additional mitigation measures would be required [ER Appendix C 1.4.60]. In relation to mitigation measures NE was concerned about their effectiveness in relation to potential noise and visual disturbance on qualifying species and seeking clarification about:

- Which mitigation measures would be applied for the three main marine construction activities.
- The effectiveness of each mitigation measure.
- The level of certainty that the mitigation measures would be effective.
- An assessment of the effectiveness of all mitigation measures for SPA birds [ER Appendix C 1.4.61].

5.138 The Applicant responded to NE's concerns as follows:

- By clarifying that the IECS toolkit was used to provide contextual information for the disturbance assessment only in its responses to Deadlines 1 (REP1-013) and 7 (REP7—27) submissions. The Applicant confirmed that the ES and HRA Report did not apply the IECS toolkit thresholds.

- By providing the updated second HRA Report (REP5-020) that included further baseline data and information on the importance of Sector B in the form of "*Appendix A: Baseline Information to Inform the HRA*".
- Further justification of the use of the 200m buffer was provided in the second HRA Report (at paragraphs 4.10.18 to 4.10.19) to justify the no AEoI presented in Table 30.
- That the assessment assumed a worst-case scenario that the construction activities could occur at any time of the year (REP1-013).
- By providing information on the construction programme in the second HRA Report (REP5-020).
- By providing further justification that for adverse effects, in terms of energetic costs or reduction in fitness, to likely occur the wading birds would need to be disturbed relatively frequently (APP-115) [ER Appendix C 1.4.62].

5.139 In its Deadline 7 submissions, NE confirmed (REP7-038) that its preference would be for references to the IECS toolkit to be removed but agreed the methodology used for the assessment was appropriate in this instance (RIES Q29) and confirmed that it was content with the Sector B bird data (RIES Q30) [ER Appendix C 1.4.63].

5.140 The Turnstone was the only SPA/Ramsar species to use port structures for roosting and the Applicant considered that would be expected to continue during construction. The reason being that the species is highly tolerant to disturbance, direct access to established roosting habitat would not be obstructed by the marine infrastructure, a wide variety of alternative structures are already available for the species to utilise in the nearby area. The Applicant also confirmed that the disturbance evidence for the Turnstone applied to both foraging and roosting and that no additional mitigation measures were required (REP7-028). NE confirmed that it was satisfied with the information on the potential disturbance for roosting SPA birds [ER Appendix C 1.4.64].

5.141 The Applicant's second HRA Report provided additional information on the effectiveness of the proposed mitigation measures, in particular with respect to minimising the potential for AEoI on qualifying features in Table 30. It was maintained that the works for the outer pier did not require mitigation, and that the construction programme was designed appropriately as it was based on and led by the mitigation measures in that activities, within 200m of the exposed intertidal, likely to cause disturbance would not occur during the winter months. The Applicant conceded to agree to the use of markers on the mudflat to improve certainty about distances. The Applicant also agreed to use an Ecological Clerk of Works during the overwintering period to ensure the agreed mitigation measures for the SPA would be adhered to and that the appropriate guidance would be provided throughout the construction works [ER Appendix C 1.4.65].

5.142 This issue was not resolved at the close of Examination. It was acknowledged by NE that the 200m disturbance buffer was an acceptable disturbance for most construction activities within a port environment where birds have shown some habituation to human activity. It was pointed out that Table 28 in the HRA Report

identified a number of species (Shelduck, Curlew, Bar-tailed godwit) with moderate to high sensitivity and moderate levels of sensitivity to disturbance have been recorded to take flight to activities further than 200m thereby experiencing increased stress/alertness and thus result in less effective foraging. NE therefore recommended a more precautionary approach to noise disturbance distances such as 300m for the buffer [ER Appendix C 1.4.66].

5.143 The Applicant maintained that the 200m disturbance distance buffer during construction phase was appropriate. The Applicant noted that the more sensitive response rates reported in Table 28 typically occur in more remote areas where individual birds are less habituated to human activity. In the context of PoI bird responses at 200m would be expected to be mild and very infrequent given the evidence of the known habituation to existing port related activity and noise [ER C.1.4.67]. In response to information submitted by NE at Deadline 8 (REP8-038), the Applicant reiterated (REP9-013) the above arguments in favour of a 200m buffer distance, and argued that the bird species located within flight initiation distances over 200m are not present on the mudflat in high numbers in the context of estuary wide numbers (<1% of the estuary wide population based on the WeBS 5-year mean peak) as noted in Table 29 of the HRA Report). Numbers above a 1% threshold of the estuary population is a threshold commonly applied by NE on the Humber Estuary to determine whether there is the potential to adversely affect individual species and has been requested by NE to be applied for the Proposed Development. As birds within the flight initiation distances are not present in numbers over the 1% threshold, these species are not of concern in relation to the potential disturbance effects associated with the Proposed Development and therefore there is no potential for adverse effects on integrity and the Applicant was confident that this remained the position.

5.144 As this issue was not solved by the end of the Examination, the ExA suggested that the Secretary of State may wish to make further enquiries to Natural England and the Applicant. The Secretary of State is, however satisfied with the representation made by the Applicant outlined in REP9-013 above in 5.143 and agrees with the ExA that the application of a 200 m disturbance distance would, in this instance, be appropriate, based on the specific context of the PoI as described above.

5.145 The ExA was content, the Secretary of State further notes, that subject to the implementation of mitigation measures secured in the draft DCO there would be no AEoI from airborne noise and disturbance for the Humber Estuary SPA qualifying features, both alone and in combination [ER Appendix C 1.4.68].

Humber Estuary Ramsar

5.146 The qualifying features for which the site was designated are listed in Annex 2 of this HRA Report and were all taken forward for consideration of AEoI.

<u>Direct loss of qualifying intertidal and subtidal habitat</u>

5.147 The Applicant's final HRA Report (REP8-014) presents the assessment for the physical loss of habitat and associated species for the Proposed Development alone (section 4.3) and for in combination effects (section 4.13). The Ramsar Criterion 1

"natural wetlands that are of international importance" was assessed together with the Humber Estuary SAC qualifying habitat "Mudflats and sandflats not covered by seawater at low tide".

5.148 The Secretary of State has considered the impacts on Ramsar Criterion 1 as set out under "Physical loss of intertidal habitat" above at paragraphs 5.110 to 5.120 for Humber Estuary SAC.

Changes to qualifying habitats as a result of the removal of seabed material during capital dredging

5.149 The Applicant's final HRA Report (REP8-014) presents the assessment for the physical damage through disturbance and/or smothering of habitat alone (section 4.4) and in combination (section 4.13) effects. The Ramsar Criterion 1 "natural wetlands that are of international importance" was assessed together with the Humber Estuary SAC qualifying habitats "Estuaries" and "Mudflats and sandflats not covered by seawater at low tide".

5.150 The Secretary of State addressed these features under "Physical damage through disturbance and/or smothering of habitat" above at paragraphs 5.121 to 5.129 for Humber Estuary SAC.

Changes to qualifying bird assemblages and species populations as a result of airborne noise and visual disturbance during construction

5.151 The Applicant's final HRA Report (REP8-014) presents the assessment for airborne noise and visual disturbance arising from construction activities (section 4.10) and in combination effects (section 4.13). The Ramsar Criterion 5 "Bird assemblages of international importance: wintering waterfowl" and Criterion 6 "Bird species/ populations occurring at levels of international importance" together with Humber Estuary SPA qualifying bird features

5.152 The Secretary of State addressed these features under "Airborne noise and visual disturbance" above at 5.131 to 5.146 for Humber Estuary SPA.

Conclusion of the appropriate assessment

5.153 The Secretary of State has carefully considered all the information presented within the application, during the Examination and the representations made by IPs, along with the Recommendation Report and the responses to the Secretary of State's further consultations.

5.154 As the competent authority for Transport Nationally Significant Infrastructure Projects as defined under the PA 2008, the Secretary of State for Transport has undertaken an appropriate assessment under regulation 63 of the Habitats Regulations in relation to the following European sites:

- Humber Estuary SAC
- Humber Estuary SPA
- Humber Estuary Ramsar

- The Wash and North Norfolk Coast SAC

Proposed development alone

5.155 The Secretary of State is satisfied that, given the relative scale and magnitude of the identified effects on the qualifying features of these European sites and where relevant, the measures in place to avoid and reduce the potential harmful effects, there would not be any implications for the achievement of the conservation objectives for all of the European sites identified above at 5.153 from the Proposed Development alone. Those conservation objectives are set out in Annex 2 of this HRA Report.

Proposed development in combination with other plans and projects

5.156 At the time of the ExA Recommendation Report NE had not come to an agreement with the Applicant on excluding AEoI beyond reasonable scientific doubt any in combination effects with other plans or projects on the Humber Estuary SAC and Ramsar site. The Applicant was therefore requested to produce a 'Without Prejudice Derogations Report' (REP8-033) which assessed the Project against three tests. Each test must be passed sequentially before proceeding to the next in order for the project to proceed. This report set out a consideration of alternatives, imperative reasons of overriding public interest, and suitable compensation measures for the Proposed Development to continue. Although the Secretary of State welcomes this submission and notes that the Derogations Report states that the Proposed Development would pass the derogations tests, further information was submitted during the IGET examination in July 2024 and NE are now in agreement with the Applicant that any AEoI of the Humber Estuary SAC and the Humber Estuary Ramsar site can be excluded beyond reasonable scientific doubt. As such, the HRA undertaken by the Secretary of State has concluded at Stage 2: Appropriate Assessment and the need to engage with the HRA derogations, including the need for compensatory measures, is no longer required.

5.157 The Secretary of State is satisfied that, given the relative scale and magnitude of the identified effects on the qualifying features of these European sites and where relevant, the measures in place to avoid and reduce the potential harmful effects, there would not be any implications for the achievement of the conservation objectives from the Proposed Development in combination with other plans and project for the Humber Estuary SPA, SAC, Ramsar site and The Wash and North Norfolk Coast SAC. Those conservation objectives are set out in Annex 2 of this HRA Report.

5.158 Based on the submissions to the examination as summarised in the ExA's RIES and Report, together with the further consultations undertaken by the Secretary of State after the close of examination the Secretary of State is satisfied that the views of NE as the appropriate nature conservation body have been considered and that they align with the position taken by the Secretary of State.

6. SUMMARY OF CONCLUSIONS

6.1 The Secretary of State has carefully considered all the information presented within the application, during examination and the representations made by IPs, along with the ExA's Report and the responses to the Secretary of State's further consultations and requests for information.

6.2 The Development is not directly connected with, or necessary to, the management of the European sites, and is not likely to have a significant effect alone on Humber Estuary SAC, Humber Estuary SPA, Humber Estuary Ramsar site and The Wash and North Norfolk Coast SAC.

6.3 The Development is not directly connected with, or necessary to, the management of the European sites, and is likely to have a significant effect in combination with other plans and projects on Humber Estuary SAC, Humber Estuary SPA, Humber Estuary Ramsar site and The Wash and North Norfolk Coast SAC. The Secretary of State therefore carried out an appropriate assessment to determine whether there would be any adverse effects on site integrity of these European sites.

6.4 The Secretary of State concludes that when mitigation measures are taken into account, adverse effects, from the Proposed Development alone and in combination with other plans and projects, on the integrity of the Humber Estuary SPA, the Humber Estuary SAC, the Humber Estuary Ramsar site and The Wash and North Norfolk Coast SAC can be excluded.

6.5 The Secretary of State has therefore concluded, as competent authority for the purposes of the Habitats Regulations, that taking into account the package of mitigation measures it is permissible for her to give consent for the Proposed Development.

Annex 1 Documents used to inform this HRA Report

NB. This list is not exhaustive. The HRA Report is informed by the application and submissions to the Examination, together with submissions after the close of Examination.

Application Documents

- Environmental Statement (including supporting figures and appendices)
- Habitats Regulations Assessment

Examination Documents produced by Applicant

- Updates to the Habitats Regulations Assessment at Deadline 5, 7 and 8.
- Habitats Regulations Derogation Report
- Outline Offshore Management Plan
- Outline Construction Environmental Management Plan

ExA Procedural Documents

- Report on the Implications for European Sites
- Examination Report

Submissions after close of Examination

- Responses from Natural England and the Applicant to consultation undertaken by the Secretary of State on 09/04/24 and 09/07/24.

Annex 2 Conservation objectives for sites considered in the appropriate assessment

The conservation objectives reproduced below are available from:

http://publications.naturalengland.org.uk/category/6490068894089216[3]

NB. In the case of all European sites identified below, the Conservation Objectives are to be read in conjunction with the accompanying Supplementary Advice documents, which provides more detailed advice and information to enable the application and achievement of the Objectives set out.

Humber Estuary SAC (Site Code UK0030170)

With regard to the SAC and the natural habitats and/or species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of the qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Features:

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks.
H1130. Estuaries.
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats.
H1150. Coastal lagoons*.
H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand.
H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
H2110. Embryonic shifting dunes.
H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram.
H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*.

[3] Accessed 25/05/2024

H2160. Dunes with *Hippophae rhamnoides*; Dunes with sea buckthorn.
S1095. *Petromyzon marinus*; Sea lamprey.
S1099. *Lampetra fluviatilis*; River lamprey.
S1364. *Halichoerus grypus*; Grey seal.

* denotes a priority habitat or species

Humber Estuary SPA (Site Code: UK9006111)

With regard to the SPA and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the habitats of qualifying species;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site**.**

Qualifying Features:

A021. *Botaurus stellaris*; Great bittern (non-breeding).
A021. *Botaurus stellaris*; Great bittern (breeding).
A048. *Tadorna tadorna*; Common shelduck (non-breeding).
A081. *Circus aeruginosus*; Eurasian marsh harrier (breeding).
A082. *Circus cyaneus*; Marsh harrier (non-breeding).
A132. *Recurvirostra avocetta*; pied avocet (non-breeding).
A132. *Recurvirostra avocetta*; pied avocet (non-breeding).
A140. *Pluvialis apricaria*; European golden plover (non-breeding).
A143. *Calidris canutus*; Red knot (non-breeding).
A149. *Calidris alpina alpina*; Dunlin (non-breeding).
A151. *Philomachus pugnax*; Ruff (non-breeding).
A156. *Limosa limosa islandica*; Black-tailed godwit (non-breeding).
A157. *Limosa lapponica*; Bar-tailed godwit (non-breeding).
A162. *Tringa totanus*; Common redshank (non-breeding).
A195. *Sterna albifrons*; Little tern (breeding).
Waterbird assemblage.

Humber Estuary Ramsar (Site Code: UK11031)

Ramsar Criteria:

1 The site is representative example of a near-natural estuary with the following component habitats: dune system with humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.

3 The site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site for natterjack toad *Bufo calamita*.

5 Assemblages of international importance:

- Species with peak counts in winter: 153934 waterfowl (5-year peak mean 1998/99 – 2002/03)

6 Species/populations occurring at levels of international importance

Qualifying species/populations (as identified at designation):

Species with peak counts in spring/autumn:

European golden plover, *Pluvialis apricaria apricaria*, *P. altifrons* Iceland & Faroes/E Atlantic	17996 individuals, representing an average of 2.2% of the population (1996-2000)
Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering)	18500 individuals, representing an average of 4.1% of the population (1996-2000)
Dunlin, *Calidris alpina alpina*, W Siberia/W Europe	20269 individuals, representing an average of 1.5% of the population (1996-2000)
Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe	915 individuals, representing an average of 2.6% of the population (1996-2000)
Common redshank, *Tringa totanus totanus*	7462 individuals, representing an average of 5.7% of the population (1996-2000)

Species with peak counts in winter:

Common shelduck, *Tadorna tadorna*, NW Europe	4464 individuals, representing an average of 1.5% of the population (1996-2000)
European golden plover, *Pluvialis apricaria apricaria*, *P. a altifrons* Iceland & Faroes/E Atlantic	30709 individuals, representing an average of 3.8% of the population (1996-2000)
Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering)	28165 individuals, representing an average of 6.3% of the population (1996-2000)
Dunlin, *Calidris alpina alpina*, W Siberia/W Europe	22222 individuals, representing an average of 1.7% of the population (1996-2000)
Black-tailed godwit, *Limosa limosa islaponica*, Iceland/W Europe	1113 individuals, representing an average of 3.2% of the population (1996-2000)
Bar-tailed godwit, *Limosa lapponica lapponica*, Iceland/W Europe	2752 individuals, representing an average of 2.3% of the population (1996-2000)

8 The site acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.

The Wash and North Norfolk Coast SAC (Site Code: UK0017075)

With regard to the SAC and the natural habitats and/or species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and,
- The distribution of qualifying species within the site.

Qualifying Features:

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sand banks.
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats.
H1150. Coastal lagoons*.
H1170. Reefs.
H1310. Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand.
H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).
H1420. Mediterranean and thermos-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Mediterranean saltmarsh scrub.
S1355. *Lutra lutra*; Otter.
S1265. *Phoca vitulina*; Common seal.

* denotes a priority habitat or species