Planning Inspectorate

REPORT on the IMPLICATIONS for EUROPEAN SITES

Proposed North Falls Offshore Wind Farm

An Examining Authority report prepared with the support of the Environmental Services Team

Planning Inspectorate Reference: EN010119

01 July 2025

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1 INTRODUCTION

1.1 Background

1.1.1 North Falls Offshore Wind Farm Limited (the applicant) has applied for a development consent order (DCO) under section 37 of the Planning Act 2008 (PA2008) for the proposed North Falls Offshore Wind Farm (the proposed development). On behalf of the Secretary of State for Housing, Communities and Local Government, an Examining Authority (ExA) has been appointed to conduct an examination of the application. The ExA will report its findings and conclusions and make a recommendation to the relevant Secretary of State (SoS) as to the decision to be made on the application.

1.1.2 For applications submitted under the PA2008 regime, the relevant SoS is the competent authority for the purposes of the Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations') and Conservation of Offshore Marine Habitats and Species Regulations 2017 ('the Offshore Marine Regulations' which apply beyond UK territorial waters ie 12 nautical miles). The findings and conclusions on nature conservation issues reported by the ExA will assist the SoS in performing their duties under the Habitats Regulations and the Offshore Marine Habitats Regulations.

1.1.3 This Report on the Implications for European sites (RIES) documents and signposts the information in relation to potential effects on European sites that was provided within the DCO application and submitted during the examination by the applicant and interested parties (IPs), up to Deadline 6 of the examination (24 June 2025). It is not a standalone document and should be read in conjunction with the examination documents referred to. Where document references are presented in square brackets [] in the text of this report, that reference can be found in the examination library published on the 'Find a National Infrastructure Project' website at the following link.

https://infrastructure.planninginspectorate.gov.uk/projects/EN010119

1.1.4 For the purpose of this RIES, in line with the Habitats Regulations and relevant Government policy, the term 'European sites' includes Special Areas of Conservation (SAC), candidate SACs, proposed SACs, Special Protection Areas (SPA), potential SPAs, listed and proposed Ramsar sites and sites identified or required as compensatory measures for adverse effects on any of these sites. For ease of reading, this RIES also collectively uses the term 'European site' for European sites as defined in the Habitats Regulations 2017 and 'European Marine Sites' defined in the Offshore Marine Habitats and Species Regulations 2017, unless otherwise stated. The 'UK National Site Network' refers to SACs and SPAs belonging to the United Kingdom already designated under the Directives and any further sites designated under the Habitats Regulations.

1.1.5 This RIES is issued to ensure that the Appropriate Nature Conservation Body (ANCB) – Joint Nature Conservation Committee (JNCC), Natural England (NE) and NatureScot, are consulted formally on Habitats Regulations matters.

This process may be relied on by the SoS for the purposes of Regulation 63(3) of the Habitats Regulations and Regulation 28(4) of the Offshore Marine Habitats Regulations.

1.1.6 It also aims to identify and close any gaps in the ExA's understanding of IPs' positions on Habitats Regulations matters, in relation to all European sites and qualifying features as far as possible, in order to support a robust and thorough recommendation to the SoS.

1.1.7 Following consultation, the responses will be considered by the ExA in making their recommendation to the SoS and made available to the SoS along with this report. The RIES will not be revised following consultation.

1.2 Documents used to inform this RIES

1.2.1 The applicant's Habitats Regulations Assessment (HRA) Report comprised the following documents:

- Report to Inform Appropriate Assessment (RIAA) Part 1 Introduction [APP-173],
- RIAA Appendix 1.1 HRA Screening [APP-174] and associated reports and appendices:
  - RIAA Part 2 Benthic Ecology Annex 1 Habitat in SAC and SPA Supporting Habitat [APP-175]
  - RIAA Part 3 Marine Mammals Annex II Species [APP-176]
  - RIAA Appendix 3.1 Marine Mammals Unexploded Ordnance Clearance Information and Assessment [APP-177]
  - RIAA Part 4 Offshore Ornithology (Birds Directive Annex 1 and Migratory Species [APP-178]
  - RIAA Appendix 4.1 Modelling the abundance of red-throated diver in the area of overlap between North Falls digital aerial surveys (12km buffer) and the Outer Thames Estuary SPA [APP-179]
  - Appendix 4.2 Population Viability Analysis [APP-180]
  - RIAA Part 5 Onshore European and Ramsar Sites [APP-181]
  - RIAA Part 6 Summary [APP-182]
  - Outline Site Integrity Plan for the Southern North Sea Special Area of Conservation [APP-243] updated [REP5-014]
  - Further information regarding marine mammals [REP1-057] updated by [REP3-046]
  - Draft marine mammals mitigation protocol [REP3-013] updated by [REP5-012] and [REP6-029]

  - Updated Information for offshore ornithology cumulative effects assessment [REP3-040]

- Habitats Regulations Derogation Provision of Evidence [APP-183] and associated reports:
  - Appendix 1 Compensatory Measures Overview [APP-184] updated by [REP1-015] and [REP6-009]
  - Annex 1A Habitats Regulations Assessment Compensation Consultation [APP-185]
  - Annex 1B Compensation Funding Statement [APP-186]
  - Annex 1C In Principle Letter of Agreement from Dogger Bank South East and West [APP-187]
  - Appendix 2 Lesser Black-backed Gull Compensation Document [APP-188] updated by [REP1-017] and [REP6-011]
  - Annex 2A Outline Lesser Black-backed Gull Compensation Implementation and Monitoring Plan [APP-189] updated by [REP1-019] and [REP6-013]
  - Appendix 3 Red Throated Diver Compensation Document [APP-190] updated by [REP1-021] and [REP6-015]
  - Annex 3A Outline Red Throated Diver Compensation and Implementation and Monitoring Plan [APP-191] updated by [REP1-023] and [REP6-017]
  - Appendix 4 Kittiwake Compensation Document [APP-192] updated by [REP2-011] and [REP6-019]
  - Annex 4A Outline Kittiwake Compensation Implementation and Monitoring Plan [APP-193] updated by [REP1-025] and [REP6-021]
  - Appendix 5 Guillemot and Razorbill Compensation Document [APP-194] updated by [REP1-027] and [REP6-023]
  - Annex 5A Outline Guillemot and Razorbill Compensation Implementation and Monitoring Plan [APP-195] updated by [REP1-029] and [REP6-025]
  - Habitats Regulations Assessment Shadow Appropriate Assessment for Guillemot of the Farne Islands SPA [REP1-056]
  - Habitats Regulations Assessment Update to breeding Season Apportioning of Lesser Black-backed gull at the Alde-Ore Estuary Special Protection Area [REP1-058]

- HRA Annex 2B: Lesser black-backed gull compensation: Effects on Designated Sites [REP4-010]
- Habitats Regulations Assessment Lesser Black-backed Gull Compensation – Gedgrave Marshes Impact Assessment [REP5-072]
- Outline Site Integrity Plan for the Southern North Sea Special Area of Conservation [REP5-015]

1.2.2 The RIAA concluded that adverse effects on the integrity (AEoI) of the Alde-Ore Estuary SPA cannot be excluded.

1.2.3 The HRA Derogation Provision of Evidence document [APP-190] describes how the derogations under the Habitat Regulations are engaged and proposals for compensatory measures. An overview of these matters is provided in Section 4 of this RIES.

1.2.4 The RIAA concluded that adverse effects on the integrity of all other European sites considered could be excluded. However, the applicant also provided a 'without prejudice' case on the derogations under the Habitats Regulations and proposals for compensatory measures in respect of several other European sites. An overview of these matters is provided in Section 4 of this RIES.

1.2.5 The applicant provided a HRA Report at Deadline 4, to assess impacts from potential compensation measures for lesser black-backed gull (LBBG) of the Alde-Ore Estuary SPA (and Ramsar). This HRA report comprised screening and an assessment of adverse effects on integrity [REP4-010].

1.2.6 In addition to the RIAA and the LBBG HRA Report, the RIES refers to representations submitted to the Examination by IPs, Issue Specific Hearing (ISH) documents, Statements of Common Ground (SoCG) and other examination documents as relevant. All documents can be found in the Examination Library.

1.3 RIES questions

1.3.1 This RIES contains questions directed to the applicant and ANCBs which are drafted in **blue, bold text**.

1.3.2 The responses to the questions posed within the RIES and comments received on it will be of great value to the ExA in understanding IPs' positions on Habitats Regulations matters. It is stressed that responses to other matters discussed in the RIES are equally welcomed. In responding to the questions, please refer to the ID number.

1.3.3 In responding to the questions in the tables, please refer to the ID number in the first column.

1.3.4 Comments on the RIES are timetabled for Deadline 8 (23 July 2025).

1.4 HRA Matters Considered During the Examination

1.4.1 The examination to date has focussed on the following matters:

Benthic ecology

- Definition of the maximum design scenario (MDS) or worst-case scenario (WCS)
- Assessment of indirect effects on the Margate and Long Sands (MLS) SAC arising from sandwave levelling and placement of cable protection

Marine mammals

- Reliance upon interim population consequences of disturbance modelling (iPCOD)
- Use of noise abatement systems/Site Integrity Plans (SIP)
- Applicant's conclusions in AEoI in respect of the harbour porpoise qualifying feature of the Southern North Sea (SNS) SAC

Ornithology

- Applicant's conclusions in relation to AEoI on the kittiwake, northern gannet, guillemot and razorbill qualifying features of the Flamborough and Filey Coast (FFC) SPA, guillemot feature of the Farne Island SPA and red-throated diver feature of the Outer Thames Estuary (OTE) SPA
- The feasibility, deliverability and likely success of the proposed compensatory measures (against various criteria) in respect of lesser black-backed gulls (LBBG), kittiwake, guillemot and razorbill, and red-throated diver qualifying features
- The availability of strategic compensation (Marine Recovery Fund)

Compensatory measures

- The approach and calculations determining the quantum of compensation required
- Proposed compensation for LBBG qualifying feature of the AOR SPA
- Proposed 'without prejudice' compensatory measures for guillemot and razorbill and kittiwake qualifying feature of FFC SPA and the guillemot qualifying feature of Farne Islands SPA
- Locations, feasibility and effectiveness of proposed compensation measures

1.5 Structure of this RIES

1.5.1 The remainder of this report is as follows:

- Section 2 summarises matters in the examination relating to the applicant's screening for potential LSE to European sites, either alone or in-combination with plans and projects
- Section 3 summarises matters in the examination relating to the applicant's assessment of AEoI, either alone or in-combination with plans and projects
- Section 4 provides an overview of the examination related to the Derogations, including Imperative Reasons of Overriding Public Interest (IROPI), alternative solutions and compensatory measures (CM)
- Annex 1 lists the European sites, qualifying features and impact pathways the applicant carried forward to consideration of AEoI

2 LIKELY SIGNIFICANT EFFECTS

2.1 European sites considered

Introduction

2.1.1 The proposed development is not connected with or necessary to the management for nature conservation of any European site.

2.1.2 The applicant's RIAA Screening Report [APP-174] describes the selection process for the screening of European sites. This is based upon a source-pathway-receptor approach. The potential for effect is based upon the known distribution, ecology and sensitives of each receptor group. The approach to screening for each group of receptors is set out in the following sections [APP-174]:

- Section 5.1 offshore SACs – Annex I habitats
- Section 6.1 offshore SACs – Annex II fish species
- Section 7.1 offshore SACs - Annex II marine mammals
- Section 8.1 offshore SPAs
- Section 9.1 onshore SPAs
- Section 10.1 onshore SACs

Sites within the UK National Site Network (NSN)

2.1.3 The applicant's RIAA Screening Report [APP-174] identified 138 European sites within the UK National Site Network for inclusion within the assessment. These are listed in the following tables which provide information regarding distances from the proposed development array area and distance to the offshore cable corridor (OCC):

- Table 5.2 benthic ecology
- Table 6.2 migratory fish
- Table 7.2 harbour porpoise, grey seal and harbour seal
- Table 8.4 offshore ornithology
- Table 9.2 onshore ornithology

2.1.4 The locations of the closest offshore European sites relevant to the proposed development are shown on figure 2.1 and onshore European sites on figure 2.2 [APP-174]. Additional sites for marine mammals are shown on:

- Figure 7.3: Humber Estuary SAC and Ramsar for grey seal
- Figure 7.4: The Wash and North Norfolk Coast SAC for harbour seal
- Figure 7.5: Southern North Sea SAC for harbour porpoise

2.1.5 It is noted that not all the sites that the applicant has identified in its screening assessment are depicted on a figure.

2.1.6 NE [REP1-044] agreed that all relevant European sites and/ or qualifying features that could be affected by the project had been identified by the applicant.

2.1.7 Whilst the proposed development is located wholly in England, the potential for LSE on several European sites located within Scotland have been identified for consideration within the applicant's assessment. On 10 December 2024 the ExA wrote to NatureScot inviting it to attend and take part in the examination as an 'other person' [PD-006]. At the time of publication of this RIES, NatureScot had not responded or submitted any representations to the examination.

Non-UK sites

2.1.8 The applicant's RIAA Screening Report [APP-174] identified 92 non-UK European sites for inclusion within the screening assessment. These are Natura 2000 sites in European Economic Area (EEA) States. They are listed in tables 5.2, 6.2, 7.2 and 8.4 of the RIAA. The locations of non-UK sites are not depicted in the RIAA or appendices.

2.1.9 Only sites within the UK NSN are addressed in this RIES.

2.2 Potential impact pathways

2.2.1 The applicant's RIAA Screening Report [APP-174] details the potential impacts and geographical extent of effects from the proposed development alone in combination with other plans and projects. Potential impacts are considered during the construction, operation and maintenance and decommissioning phases.

2.2.2 The applicant considered that all potential impacts during the decommissioning phase would be similar to, and potentially less than, those outlined in the construction phase [APP-174]. The impact pathways considered for each receptor group discussed in this RIES are set out in tables 5.1, 6.1, 7.1 8.1, 9.3 and 10.3 of the RIAA screening report [APP-174] and summarised in table 2.1 below.

Table 2.1: Pathways for LSE assessed by the applicant [APP-174]

Receptor Group	LSE Pathway
Annex 1 habitats (table 5.1)	• Lasting habitat loss (operation only) • Temporary physical disturbance • Increased suspended sediment concentrations • Smothering due to increased suspended sediment • Re-mobilisation of contaminated sediments • Colonisation of introduced substrate, including non-native species (operation only)

Receptor Group	**LSE Pathway**
Annex II fish species (table 6.1)	• Physical disturbance, displacement and temporary habitat loss • Lasting habitat loss • Increased suspected sediments and sediment re-deposition • Re-mobilisation of contaminated sediments • Accidental release of pollutants • Introduction of non-native species • Underwater noise and vibration • Electromagnetic field • Changes in fishing activity
Annex II marine mammal species (table 7.1)	• Physical or auditory injury and behavioural effects from underwater noise during the construction, operation, and decommissioning (including, but not limited to, piling, other construction activities, vessel noise, operation and maintenance activities, operational wind turbines, and decommissioning activities). • Physical or auditory injury and behavioural effects from underwater noise during the clearance of Unexploded Ordnance (UXO) (separate Marine Licence). • Any barrier effects as a result of underwater noise • Vessel interactions (increased risk of collision) • Disturbance at seal haul out sites • Changes to water quality • Changes to prey availability and supporting habitats, and any disturbance to foraging at sea
Offshore ornithology (table 8.1)	• Disturbance and displacement due to work activity, presence / movements of vessels and other plant, and lighting • Disturbance / displacement / barrier effect due to presence of turbines and other infrastructure • Collision risk due to the presence of turbines and other infrastructure (operation only) • Indirect impacts through effects on habitats and prey species

Receptor Group	LSE Pathway
Effects on qualifying features of onshore SPA/Ramsar sites considered in the HRA screening (table 9.3)	• Disturbance of qualifying features within site boundaries from noise and visual disturbance (during construction and decommissioning) • Direct permanent loss of functionally linked land habitats which support qualifying features (construction only) • Direct temporary damage / disruption of habitats within site boundaries which support qualifying features (construction and decommissioning only) • Indirect effects on functionally linked land habitats which support qualifying features from air quality emissions (construction and decommissioning only) • Indirect effects on functionally linked land (ex-situ) habitats which support qualifying features (construction and decommissioning only) • Disturbance impacts on qualifying features from noise and visual disturbance in functionally linked land (ex-situ) habitats (construction and decommissioning only)
Effects on Annex I and Annex II species of onshore SPA/Ramsar sites considered in the HRA screening (table 10.3)	• Indirect effects on Annex I habitats and Annex II species from air quality emissions (construction and decommissioning only) • Indirect disturbance of Annex II species from noise (construction and decommissioning only) • Indirect disturbance of Annex II species from visual / lighting (construction and decommissioning only) • Indirect effects on Annex I habitats and Annex II species arising from changes in supporting surface or groundwater resources • Direct and indirect effects on ex-situ habitats which support Annex II species of European sites.

2.2.3 No additional impact pathways have been identified by IPs for inclusion within the assessment in the examination to date.

2.3 In-combination effects

2.3.1 Section 4.1 of the applicant's RIAA Screening Report [APP-174] detailed the applicant's overall approach to assessing in-combination effects. This follows a tiered approach as set out in table 4.1 [APP-174]. Where an LSE is identified for the project alone, it is automatically screened into the in-combinations effects assessment.

2.3.2 The plans and projects considered in the in-combination assessments by the applicant are set out for each receptor group and are detailed in the following sections of the RIAA:

- Table 2.5 of [APP-175] for Annex I habitat.
- Paragraph 247 of [APP-176] for marine mammals.
- Paragraph 114 of [APP-178] for red-throated divers.
- Table 4.21 of [APP-178] for lesser black-backed gull (LBBG).
- Table 4.32 of [APP-178] for gannet.
- Table 4.39 of [APP-178] for kittiwake.

2.3.3 The RIAA Screening Report [APP-174] explains that activities such as commercial fisheries and operation of offshore wind farms already in existence, were included within the baseline conditions and therefore did not form part of the in-combination effects assessment.

2.3.4 No additional plans or projects have been highlighted by IPs in the examination to date

2.4 The applicant's assessment

2.4.1 The applicant's conclusions in respect of screening for LSE are presented by receptor group in section 11 of the applicant's RIAA Screening Report [APP-174]. Detailed information is provided in the following tables:

- Table 5.2 for Annex I benthic habitat
- Table 9.4 for onshore ornithology
- Table 10.4 for habitats and species
- Table 11.1 for marine mammals
- Table 11.2 for offshore SPAs.

Sites for which the applicant concluded <u>no LSE</u> on all qualifying features

2.4.2 The European sites and qualifying features for which the applicant concludes no LSE and therefore are screened out are listed in the following tables [APP-174]:

- Table 5.2 – Annex I benthic habitat.
- Table 6.2 - migratory fish.

- Table 7.2 - harbour porpoise, grey seal and harbour seal.
- Table 8.4 - offshore ornithology.
- Table 9.4 - onshore ornithology.
- Table 10.4 - habitats and species.

2.4.3 The applicant's RIAA Screening Report [APP-174] concluded no LSE for sites identified where migratory fish species were qualifying features. Therefore, this matter is not discussed further in this RIES.

2.4.4 No representations have been made to date by any IPs on the conclusions of no LSE for the sites and features screened out in the applicant's screening assessment.

Sites for which the applicant concluded LSE on some or all qualifying features

2.4.5 At the point of application, the applicant concluded that the proposed development would be likely to give rise to significant effects, either alone or in combination with other projects or plans, on one or more of the qualifying features of the UK European sites detailed in table 2.2 below.

Table 2.2 European sites within the UK NSN for which LSE was identified by the applicant

Receptor group	European site
Annex I benthic habitat	Margate and Long Sands SAC
Marine mammals	Humber Estuary SAC Humber Estuary Ramsar site Southern North Sea SAC The Wash and North Norfolk Coast SAC
Onshore ornithology	Hamford Water SPA Hamford Water Ramsar site Stour and Orwell Estuaries SPA Stour and Orwell Estuaries Ramsar site Colne Estuary (Mid-Essex Coast Phase 2) SPA Colne Estuary (Mid-Essex Coast Phase 2) Ramsar site
Habitats and species	Hamford Water SAC
Offshore ornithology	Outer Thames Estuary SPA Alde-Ore Estuary SPA Alde-Ore Estuary Ramsar site

Receptor group	European site
	Sandlings SPA Minsmere-Walberswick SPA Minsmere-Walberswick Ramsar site Deben Estuary SPA Deben Estuary Ramsar site Hamford Water SPA Hamford Water Ramsar site Stour and Orwell Estuaries SPA Stour and Orwell Estuaries Ramsar site Thanet Coast and Sandwich Bay SPA Thanet Coast and Sandwich Bay Ramsar site Benacre to Easton Bavents SPA Colne Estuary SPA Colne Estuary Ramsar site Broadland SPA Broadland Ramsar site Foulness SPA Foulness Ramsar Stodmarsh SPA Stodmarsh Ramsar site Dengie SPA Dengie Ramsar site Blackwater Estuary SPA Blackwater Estuary Ramsar site Abberton Reservoir SPA Abberton Reservoir Ramsar site Crouch and Roach Estuaries SPA Crouch and Roach Ramsar site Breydon Water SPA Breydon Water Ramsar site The Swale SPA The Swale Ramsar site Benfleet and Southend Marshes SPA Benfleet and Southend Marshes Ramsar site Thames Estuary and Marshes SPA Thames Estuary and Marshes Ramsar site Medway Estuary and Marshes SPA Medway Estuary and Marshes Ramsar site

Receptor group	European site
	Breckland SPA Dungeness Romney Marsh and Rye Bay SPA Dungeness Romney Marsh and Rye Bay Ramsar North Norfolk Coast SPA North Norfolk Coast Ramsar site The Wash SPA Chichester and Langstone Harbours SPA Solent and Southampton Water SPA Solent and Southampton Water Ramsar site Flamborough and Filey Coast SPA Teesmouth and Cleveland Coast SPA Northumbria Coast SPA Coquet Island SPA Farne Island SPA Forth Islands SPA Imperial Dock Lock Leith SPA Fowlsheugh SPA Ythan Estuary, Sands of Forvie and Meikle Loch (extension) SPA Ythan Estuary, Sands of Forvie and Meikle Loch (extension) Ramsar site Loch of Strathbeg SPA Troup, Pennan and Lions Heads SPA Inner Moray Firth SPA Inner Moray Firth Ramsar site Cromarty Firth SPA East Caithness Cliffs SPA Caithness and Sutherland Peatlands SPA North Caithness Cliffs SPA Pentland Firth Islands SPA Hoy SPA Auskerry SPA Orkney Mainland Moors SPA Rousay SPA Marwick Head SPA Fair Isle SPA West Westray SPA Papa Westray (North Hill Holm) SPA

Receptor group	European site
	Sumburgh Head SPA Mousa SPA Noss SPA Foula SPA Papa Stour SPA Fetlar SPA Otterswick and Graveland SPA Ronas Hill – North Roe and Tingon SPA Ronas Hill – North Roe and Tingon Ramsar site Hermaness, Saxa Vord and Valla Field SPA
Onshore ornithology	Hamford Water SPA Hamford Water Ramsar site Stour and Orwell Estuaries SPA Stour and Orwell Estuaries Ramsar site Colne Estuary (Mid-Essex Coast Phase 2) SPA Colne Estuary (Mid-Essex Coast Phase 2) Ramsar site.
Habitats and species	Hamford Water SAC

2.4.6 The qualifying features and LSE impact pathways screened in by the applicant for each site are identified in table 2.2 above and are presented in Annex 1 tables of this RIES.

2.4.7 No matters have been raised in the examination to date in relation to the applicant's screening assessment.

2.5 Pre-examination and examination matters

Matters agreed by ANCBs prior to examination commencing

2.5.1 NE [RR-243, C34] advised that it agreed all relevant European sites designated for Annex I benthic habitat had been screened into the applicant's assessment in [APP-174].

Identification of effects

2.5.2 NE [RR-243, C35 and C36] provided advice about the applicant's assessment of indirect effects to the MLS SAC in the HRA Screening [APP-174] and RIAA Part 2 [APP-175] under the heading of 'screening'. The issues raised related to cable protection parameters, and the assessment of bedload transport and ecological halo effects including change to benthic communities and supporting processes. The applicant concluded that LSE from indirect effects from placement of cable protection and bedload transport could not be ruled

out and assessed these pathways during all phases of the proposed development in the RIAA Part 2 [APP-175]. Examination matters relating to this are discussed in section 3 of this RIES.

RIES Q1: To NE: The ExA seeks clarification of your advice on the applicant's screening of LSE pathways for the MLS SAC. Confirm if you consider that there are additional LSE pathways, or LSE pathways excluded by the applicant, which should be assessed for adverse effects on integrity. If yes, provide reasons and confirm what additional assessment you consider is required.

3 ADVERSE EFFECTS ON INTEGRITY

3.1 Conservation Objectives

3.1.1 The conservation objectives for the European sites for which a LSE was identified by the applicant at the point of the DCO application were included in the following parts of the RIAA:

- Annex I benthic habitat [APP-175, section 2.4.2]
- marine mammals [APP-176]
- offshore ornithology [APP-178]
- onshore ecology [APP-181]

3.1.2 The RIAA appendices do not confirm whether the identified European sites are in a favourable or unfavourable condition.

3.1.3 The RIAA Part 2 Benthic Ecology Annex I Habitat [APP-175] stated that the MLS SAC has a conservation objective to maintain the Annex I sandbank in favourable condition. The ExA noted that the condition assessment for this SAC was updated by NE in January 2025 and the condition assessment concluded that the site is in unfavourable condition due to existing anthropogenic pressures. The ExA sought comment from the applicant at ISH2 on the implications of this (as reported in [EV6-007]). The applicant provided an updated version of its Supporting Information on Offshore Additional Mitigation [REP4-041], which acknowledged the updated condition assessment. It stated that the updated condition statement identified that the coarse sediment and sand sub-features of the Annex I sandbank were in unfavourable condition. The applicant stated that the rationale provided by NE for the updated condition statement related to placement of infrastructure in the SAC and as the proposed development avoids direct overlap with the SAC, the change did not influence its assessment in the RIAA. It reiterated this position in response to the ExA's question [PD-013, Q10.0.10]. The RIAA Part 2 has not been updated.

3.1.4 The ExA [PD-013, Q10.0.11] sought the views of NE on the implications of the updated condition assessment for the applicant's HRA. NE [REP5-110] referred to its comments in [REP5-105], which stated that in the absence of further interpretation of hydrodynamic modelling it could not rule out an AEoI of the MLS SAC during operation of the proposed development, as the scale of impact would take the site further away from the restore objective.

RIES Q2: To the applicant: In your proposed updates to the RIAA Part [APP-175] planned for submission no later than Deadline 8, update the assessment of AEoI to the MLS SAC to include consideration of NE's updated condition assessment.

RIES Q3: To the applicant: The applicant is requested to confirm which, if any, European sites affected by the project are in unfavourable condition (including unfavourable recovering).

3.2 The applicant's assessment

3.2.1 The European sites and qualifying features for which LSE were identified were further assessed by the applicant to determine if they could be subject to AEoI from the proposed development, either alone or in combination. The outcomes of the applicant's assessment of effects on integrity are summarised by receptor group, in tables 6.1 to 6.5 of the RIAA Part 6 Summary [APP-182].

Mitigation measures

3.2.2 The applicant's Schedule of Mitigation [APP-012] identifies the plans that would implement the mitigation relied on in relation to the applicant's conclusions of AEoI.

Sites for which the applicant concluded no AEoI

3.2.3 The applicant's RIAA Part 6 Summary [APP-182] concluded that the AEoI on European sites could be excluded, both alone and in-combination, for all European sites and qualifying features assessed, with the exception of the lesser black-backed gull feature of the Alde-Ore Estuary SPA and Ramsar site.

3.2.4 The DCO application also included 'without prejudice' derogation cases and information on proposed compensatory measures for the following qualifying species and sites:

- red-throated diver feature of Outer Thames Estuary SPA [APP-190]
- kittiwake feature of FFC SPA [APP-192]
- guillemot and razorbill features of FFC SPA [APP-194]

3.2.5 This RIES provides an overview of the derogations and compensatory measures in Sections 4 and 5.

3.2.6 The applicant's conclusions in respect of seven European sites were disputed by IPs and questioned by the ExA during the course of the examination. See Section 3.3 of this RIES for further details.

Sites for which the applicant identified the potential for AEoI

3.2.7 The applicant concluded that the proposed development would result in AEoI to the following European site and feature, either alone or in combination with other projects or plans:

- Alde-Ore Estuary SPA for lesser black-backed gull due to collision risk during operation [APP-188]

3.2.8 The above site and feature was therefore the subject of a derogation case submitted by the applicant. Further detail is provided in sections 4 and 5 of this RIES.

RIES Q4: To NE: With reference to Tables A3 and A4, can NE confirm if it agrees with the applicant's conclusions of no AEoI to the following:

- **Alde-Ore Estuary SPA: Sandwich tern (breeding), avocet (breeding and non-breeding), marsh harrier (breeding), redshank (non-breeding), ruff (non-breeding) and notable assemblage of breeding and wintering wetland birds.**
- **Outer Thames Estuary SPA: common tern**
- **FFC SPA: seabird assemblage**
- **Stour and Orwell Estuaries SPA and Ramsar: avocet (breeding), black-tailed godwit (wintering), dark-bellied brent goose (wintering), dunlin (wintering), grey plover (wintering), knot (wintering), pintail (wintering), redshank (wintering), redshank (autumn passage), waterbird assemblage.**
- **Farne Islands SPA: Sandwich tern (breeding), common tern (breeding) Arctic tern (breeding).**

3.3 Examination matters

3.3.1 Matters raised in the examination to date, or for which the ExA seeks clarity, in relation to AEoI are summarised in the section below. The following section is structured by receptor group, mirroring the structure of the RIAA and representation from NE. The following receptor groups were identified by the ExA for inclusion, where matters relevant to HRA were raised by IPs:

- benthic and intertidal ecology and supporting marine processes
- marine mammals
- offshore ornithology
- onshore ornithology

3.3.2 NE stated in its RR [RR-243] that based on the information submitted with the DCO application, it was not satisfied that AEOI could be excluded for the following European sites:

- Alde-Ore Estuary SPA
- Alde-Ore Estuary Ramsar site
- Farne Islands SPA
- Flamborough and Filey Coast SPA
- Margate and Long Sands SAC
- Orfordness – Shingle Street SAC
- Outer Thames Estuary SPA
- Southern North Sea SAC
- Stour and Orwell SPA

3.3.3 NE provided a Summary of Key Issues in its RR [RR-243] and a Risk and Issues Log at Deadline 1 [REP1-070] to track progress made on issues which were outstanding through the examination. The Risk and Issues Log was subsequently updated in [REP3-064], [REP4-067] and [REP5-109].

Benthic and intertidal ecology and supporting marine processes

3.3.4 NE [RR-243] raised several concerns about the applicant's assessment, which meant that it could not advise the exclusion of AEoI of MLS SAC but stated that these could potentially be resolved subject to the applicant providing updated information, modelling and assessment.

3.3.5 The ExA understands that NE's concerns relate to the LSE pathway of suspended sediment concentration and bedload transport during construction and operation of the proposed development assessed in the RIAA Part 2 [APP-175], for the following matters:

- Construction – indirect effects from activities such as sandwave levelling to facilitate cable installation, including sediment deposition and sandwave recovery.
- Operation – indirect effects from the presence of cable protection, leading to change in supporting processes (tidal speed and bed shear stresses) that could result in morphological change (scour accretion and sediment character change).
- Operation – change in supporting processes resulting in impacts to SPA supporting habitats and availability of prey.

RIES Q5: To NE: Confirm if the ExA's understanding is correct or, if not, clarify which other activities or pathways are of concern.

3.3.6 Table 3.1 below sets out the ExA's understanding of matters raised to date in the examination.

Table 3.1: Annex I habitats – key issues raised in the examination to date by the ExA and IPs in relation to the applicant's assessment of effects on integrity (alone and in-combination)

ID	Issue	Details	ExA observation/ question
MARGATE AND LONG SANDS SAC			
3.1.1	Worst case scenario (WCS) parameters, modelling and AEoI conclusion – sediment deposition during construction, seabed mobility and sandwave recovery	NE [RR-243, P5] stated there was uncertainty in the parameters used for modelling and assessment of sediment deposition during construction, seabed mobility and erosion and sandwave recovery, which meant it could not exclude AEoI for benthic communities at the SAC from indirect effects. The applicant [REP3-045] provided information on seabed and bedform mobility based on analysis of its bathymetric surveys and interpretation of bedform geology. The applicant did not agree with NE that removal or modification of sandwaves could interfere with sediment transport due to failure of sandwaves to recover after levelling. It stated that the dynamic nature of sandwaves means direct changes to the seabed were likely to recover over short periods due to natural sediment pathways. The large size of sandwaves improves ability to recover quickly, as supported by a review of the evidence base for similar sandwaves at Race Bank and Haisborough, Hammond and Winterton SAC. It referred to ABPmer work, which demonstrated that the sandwave area was governed by a highly dynamic environment conducive to development of sandbanks that would be undisturbed by the OCC. It estimated recovery time at a few days to 1 year from cable trenching and seabed levelling. It stated that sediment transport processes operated at a much larger scale than levelling and would not be disrupted.	The ExA understands that NE would consider this matter resolved subject to a commitment from the applicant to pre- and post-construction monitoring of sandwave fields. **RIES Q6: To NE: Based on the applicant's monitoring commitments in the OIPMP [REP6-031] confirm if you are content that this matter is resolved and that AEoI from this LSE pathway can be excluded. If you have outstanding concerns, explain these and the steps you consider are required to resolve them.** **RIES Q7: To the applicant: By Deadline 7, submit contours showing the**

ID	Issue	Details	ExA observation/ question
		NE [REP4-067] reported progress based on [REP3-045] but was still concerned about the adequacy of the applicant's assessment. If the applicant agreed to carry out further bedform migration analysis using high-resolution time-lapse bathymetry collected pre- and post-construction this would resolve P5. It [REP4-058] advised that repeat surveys were required to support conclusions. The applicant submitted a Modelling Report [REP4-040], which predicted hydrodynamic change and extent of suspended sediment plume and deposition during construction. The applicant provided interpretation of the modelling in [REP4-042]. It stated that worst case disturbance along the export cable would persist for up to 17 hours before depositing to form a layer on the seabed but under existing conditions sediment would be readily re-mobilised and reduce thickness to zero. There would be a change of small magnitude in seabed level. NE [REP5-109] stated that the modelling mostly resolved P5. It requested clarification on WCS sediment disposal impacts near the SAC (see ID3.1.5) [REP5-104] and asked for predicted pressures from elevated sediment deposition to be presented using contours relevant to the Marine Evidence based Sensitivity Assessment (MarESA) pressure benchmark thresholds [REP5-105]. In response to the ExA's question [PD-013] on specific additional information it considered was needed to exclude AEoI, NE [REP5-110, Q10.0.11] stated that the WCS for secondary impacts needs to be identified, quantified and evaluated sufficiently in an ecological context to provide full transparency but it considered it was likely this could be resolved before the close of examination.	**predicted pressures from elevated sediment deposition relevant to the MarESA pressure benchmark thresholds as requested by NE.**

ID	Issue	Details	ExA observation/ question
		The applicant [REP5-055] agreed that additional surveys would enable quantification of migration rates and add to the evidence base for sandwave recovery. It committed to updating the Offshore In Principle Monitoring Plan (OIPMP) to secure pre- and post-construction monitoring of parts of the OCC. The OIPMP would be secured through various DML Conditions relating to pre- and post-construction (Schedules 8 and 9 of the dDCO [REP6-005]. It [REP5-054, Q10.0.9] stated that revised volumes for sandwave levelling were set out in [REP4-041] and the dDCO [REP4-005], which reflected refinement and requirements for deep water route dredging. The ExA [PD-013] noted that modelling in [REP4-040] considered different construction activities separately and queried if there was potential for simultaneous activities resulting in cumulative deposition. The applicant [REP5-054, Q10.0.11] stated that the modelling provides the WCS for all locations at any point in time, and the full plume would not happen all at the same time meaning its assessment was conservative. It stated that most construction activities in [REP4-040, Table 1.1] will not occur at the same time. For example, the levelling of sandwaves along the OCC needs to occur before trenching to bury those cables. The potential for spatial overlap of concurrent activities is low and the extent of sediment plumes shown in the model would not increase. At Deadline 6 [REP6-089] NE continued to record this matter as unresolved (amber) but stated that it expected an updated OIPMP from the applicant to address concerns about bedform recovery. Its comments on P5 in relation to sediment deposition were made about Kentish Knock East Marine Conservation Zone (MCZ) only.	

ID	Issue	Details	ExA observation/ question
		The applicant [REP6-059] clarified that outputs in the modelling [REP6-053] considered the MarESA benchmark for light deposition. The interpretation report [REP4-042] concluded total seabed level change of greater than 5cm, which is the benchmark for a light deposition event. The applicant updated the OIPMP [REP6-031] to include an outline of its proposed approach to adaptive management and clarify its commitments to monitoring. It committed to consulting with the MMO and SNCB on adaptive management if monitoring results showed a greater impact than concluded in the RIAA. It committed to post-construction monitoring of unburied or shallow cables, and sandwave recovery in targeted locations for up to 3 years, together with monitoring of effects of cable protection (if placed) near to the SAC.	
3.1.2	WCS for scour prevention and cable protection	NE [RR-243, P6, B5, B13, B28, C1, C12, C13, C36 and C38] had concerns about the WCS used for cable protection adjacent to the SAC and requested further information. It stated that there was insufficient detail on placement of additional cable and/ or scour protection over the operational life of the proposed development, noting there were no calculations to support the figure used of approximately 4% of cable requiring reburial. It sought clarity on how the regulator would know the WCS was not exceeded and advised that further dDCO or DML restrictions might be needed. The applicant [REP1-044] stated that the WCS is set out in table 2.2 of the RIAA Part 2 [APP-175] and fully assessed in section 2.4.3, as well as ES Chapter 8 [APP-022, Impact 6]. The WCS is up to 12.5km of cable protection along the export cable route if cable cannot be buried, based on 10% of the export cable length.	The ExA understands that NE's concerns about the WCS and parameters used for scour prevention and cable protection may be resolved subject to the applicant confirming that the indicative layout in [REP4-040] represents the WCS. It understands that NE's remaining concerns relate to modelling, as discussed at ID3.1.3.

ID	Issue	Details	ExA observation/ question
		The primary means of proposed cable protection is burial, which it stated would minimise the amount of [physical] cable protection needed. The applicant identified key areas that cable protection might be required as locations of outcropping (which it stated were located away from the SAC based on its geophysical surveys), cable crossings (of which it stated the closest to the SAC would be Neuconnect, at circa 200m southeast) and due to unforeseen incidents, such as with vessels. It used a value of 10% of the OCC requiring cable protection, which it stated was comparable to other OWF projects. It stated that the WCS was based on the full quantum of cable protection allowed within the dDCO parameters [REP6-005] being placed, and deployment of cable protection being restricted to within 10 years of construction (as secured in DML Conditions 34 and 35 (Schedules 8 and 9 of the dDCO). It stated that conclusions would be unaffected by cable protection location as ramping would occur, with sediment accumulating to protrusion height before being transported by bedload processes. As a worst-case, with cable protection at 1.4m high and a 30-degree angle of repose, the ramp footprint width would be 2.5m. It maintained there would be no AEoI as gross patterns of bedload transport across the export cables would not be significantly impacted. The DML for the transmission assets (Schedule 9 of the dDCO) includes conditions limiting the total length, area and volume of cable protection including crossings (Condition 12). For Work Nos. 3 and 4A the total length is 125.4km. Condition 22(1)(e) requires a scour protection plan to be agreed with the MMO prior to commencement of the stage. Condition 22(1)(h) similarly requires a cable specification and installation plan (CSIP) in	**RIES Q8: To NE: Confirm if the ExA's understanding is correct or, if not explain your outstanding concerns about the WCS parameters for scour prevention and cable protection.** **RIES Q9: To the applicant: Noting that the DML provides a maximum total length, area and volume of cable protection, and that NE's request for WCS parameters for cable protection adjacent to the SAC remains unresolved (C32), confirm the WCS parameters for cable protection and scour prevention that could result in potential LSE to the MLS SAC used in the assessment, how these would be secured, and how the regulator can have confidence that these would not be exceeded.**

ID	Issue	Details	ExA observation/ question
		accordance with the Outline CSIP [REP6-051] with details of the volume and area of cable protection for each cable crossing and proposals for monitoring of offshore cables and protection during the proposed development's operational lifetime. Regarding additional scour or cable protection during the lifetime, the applicant [REP1-044] stated that evidence shows the seabed is moving and as such the amount of cable burial is a challenge to predict but 4% is based on experience of other OWFs. The applicant [REP4-041] also committed to removal of gravity-based foundations (GBS), which resulted in a reduced seabed footprint and reduced volume of scour protection. In response to a request from the ExA [PD-009] to explain how parameters were generated and confirm the anticipated number of cable crossings, the applicant [REP2-020, Q1.2.3] provided further detail and stated its approach was in line with other OWFs including Sheringham and Dudgeon Extension Projects (SADEP). The number and location of proposed cable crossing locations were shown on the Export Cable Crossing Zone Plan [REP1-059]. Exact dimensions would be established later but the WCS for cable protection includes cable crossings. NE [REP5-109] stated that P6 had progressed but it required the applicant to address comments on modelling and bed shear stress. It recorded no change in [REP6-089]. NE [REP5-104] noted that the model used an indicative cable protection length of 400m adjacent to the SAC and sought clarification if this was the WCS. NE [REP5-105] welcomed the MDS reduction presented in [REP4-041] but advised that mitigation should go further to avoid impacts to the SAC. Regarding B5, B13 and B28, it advised that	

ID	Issue	Details	ExA observation/ question
		these matters would be resolved subject to the applicant confirming the cable protection layout in [REP4-040] is the WCS for offshore areas. NE recorded no change [REP6-089] pending review of updated applicant documents. NE [REP5-109] [REP5-105] [REP6-089] recorded no change for C1, C13 and C38, and sought clarification on the modelling to show that cable protection would not affect supporting processes (see ID3.1.3). NE did not include C36 in [REP5-109] [REP6-089] but C32 seeks similar information about the cable protection parameters and is shown as unresolved (amber). In response to NE's items B5 and B28, the applicant [REP6-059] stated it would commit to no cable protection in areas where the seabed is shallower than 5m above chart datum (CD) to ensure there would be negligible impact on the wave regime and nearshore sediment transport. The applicant's response to NE's comments on modelling are set out in ID 3.1.3.	
3.1.3	Potential for indirect effects from changes to bedload transport and ecological halo effects during operation	NE [RR-243, P7, C2 and C35] advised there could be indirect effects from changes to bedload transport and ecological halo effects from cable protection placement, altering the structure and function of Annex I sandbanks. It requested a more detailed assessment that considered the SAC condition assessment. The applicant [REP1-044] pointed to commitments during site selection to avoid the SAC and additionally committed to a buffer of 150m between the SAC and offshore cable and protection, which would be secured through a new Condition 36 in the DML (Schedule 9 of the dDCO [REP6-005]). It maintained there would	**RIES Q10: To NE: Confirm if the applicant's modelling updates and clarifications address your outstanding concerns. If not, set out the remaining concerns, the reason for them and what steps you consider are required to resolve these such that you could advise that AEoI of the**

ID	Issue	Details	ExA observation/ question
		be no AEoI from indirect effects based on the LSE pathways assessed, upon which it had consulted NE on multiple occasions. Regarding susceptibility to scour, the applicant [REP3-045] stated that sandwave areas are loaded with sediment and dynamic. Bedforms are mobile so the seabed will rise as a crest migrates from one location to another whilst the seabed will lower (appear to scour) as the trailing trough moves with the wave. It stated that this is part of the natural process of seabed mobility. NE [REP3-059] [REP3-064] welcomed the proposed 150m buffer but advised further evidence was required to demonstrate that cable protection would not modify sediment transport pathways leading to morphological change. In response, the applicant submitted further modelling [REP4-040] [REP4-042] (see ID3.1.1). The hydrodynamic model was run for the baseline and proposed development (based on a WCS of 57 WTGs, 2 OSP and cable protection) and showed difference in tidal speed was less than 2% across cable protection sections. Change in bed shear stress was increased up to 10% at cable protection sections. It stated that the SAC was remote from the zone of influence on tidal current speeds and bed shear stresses; as such, no pathway exists and there is no change arising from the proposed development. The applicant [REP5-054, Q10.0.11] stated that the RIAA [APP-175] would be updated at Deadline 8 to incorporate the modelling outcomes and 150m buffer. It maintained there would be no AEoI of the SAC, and noted there is no precedent of derogations for indirect effects on sites designated for benthic qualifying features.	**SAC can be excluded. In doing so, provide any evidence you hold the demonstrates the proposed 150m buffer would not be sufficient mitigation to avoid AEoI.**

ID	Issue	Details	ExA observation/ question
		NE [REP5-105] advised that further interpretation of the modelling was required to demonstrate that sediment transport pathways and processes would not be modified, leading to morphological change that could alter the extent, distribution and composition of benthic communities in the SAC. It [REP5-104] queried if the model resolution was sufficient to inform understanding of sediment transport patterns, seabed sediment composition and morphology. It advised that the contribution of array cable protection to change in tidal current speed and bed shear stresses should be considered in the model. It requested presentation of modelled changes in bed shear stress relative to baseline and the threshold for sediment movement for different sediment fractions, as well as an evaluation of impacts on erosional and depositional processes at key areas of interest including the SAC. NE [REP6-089] recorded no change at Deadline 6. The MMO [REP6-082] noted NE's comments on [REP5-104]. In response to the ExA's question [PD-013] about whether the modelling [REP4-040] [REP4-042] was sufficient to support the 150m buffer to avoid AEoI, NE [REP5-110, Q10.0.11] referred to its advice in [REP5-104] [REP5-105]. It stated that near-field effects should be evaluated for example cable protection blockage effects on sediment transport at the SAC. NE [REP5-110, Q10.0.12] stated that further interpretation of the hydrodynamic modelling was required to demonstrate cable protection would not modify processes on or near the SAC. The applicant [REP6-059] considered the modelling resolution was appropriate and consistent with the approach on other	

ID	Issue	Details	ExA observation/ question
		OWFs. It used a 0.1km grid resolution along the OCC. It stated that predicted absolute change in bed shear stress was provided in [REP4-041, figures 5.60 to 5.67], which showed change in the SAC as less than 0.05 newtons per square metre (N/m^2). The applicant updated the modelling [REP6-053, figures 5.36 to 5.43] to include baseline absolute bed shear stress. It stated that a change of $0.05N/m^2$ on a baseline of $2N/m^2$ would have no discernible effect on sediment sizes that could be transported. The applicant [REP6-059] stated that an indicative 400m length of cable protection adjacent to the SAC was used in the modelling but in the unlikely event that more protection was needed, it would have no discernible effect (noting that it would be beyond the 150m buffer). The applicant [REP6-059] stated it had made extensive commitments including reducing the number of export cables, avoiding overlap with the SAC and providing a 150m buffer. It maintained its position that there would be no AEoI.	
3.1.4	Cable protection measures	The applicant has not committed to specific cable protection types or considered the limitations of some methods. NE [RR-243, P12, C7, C10, C11 and C41] stated that effects could be further reduced through cable protection other than rock protection. It requested consideration of more readily removable cable protection, with options in an outline decommissioning plan that commits to removal of all surface laid infrastructure. To progress this matter, the ExA [PD-013, Q10.0.12] asked the applicant to provide a full response to NE's comments including an explanation of predicted impacts of each cable protection option. It requested NE to clarify if its advice was that AEoI could	**RIES Q11: To applicant: If monitoring of cable protection in accordance with the CSIP shows adverse effects to the SAC qualifying features, explain how this would be addressed, including at decommissioning if cable protection that is not readily removeable has been used.**

ID	Issue	Details	ExA observation/ question
		not be excluded without a commitment to remove cable protection. NE [REP5-110] stated that further interpretation of the applicant's modelling was needed (see ID3.1.3); if effect pathways exist following this then any placement of scour prevention or cable protection constitutes a lasting impact and unless relevant commitments were made, together with sufficient certainty about successful removal of cable protection by the applicant, these impacts could hinder the SAC conservation objectives. The applicant [REP5-054] stated that ES Chapter 10 [APP-024] concluded leaving cable protection in situ at decommissioning would not result in significant effects and as such a commitment to remove it would be disproportionate. It did not provide further explanation of the predicted impacts of each option. It [REP6-059] maintained that an outline decommissioning plan was not necessary and stated that this approach was consistent with SADEP and Rampion 2. NE [REP6-089] recorded no change in these matters at Deadline 6 and they continued to be unresolved (amber).	**RIES Q12: To NE: If further modelling interpretation from the applicant shows no LSE effect pathway from placement of cable protection near to the SAC, confirm if your advice is that cable protection still needs to exclude rock protection and be readily removable to avoid AEoI? If so, why?**
3.1.5	Sediment disposal locations	NE [RR-243, C23] noted that the applicant proposed the whole order limits (offshore) for sediment disposal, but it did not agree with the impact assessment that informed site characterisation for the purpose of defining sediment disposal areas. It advised that the Site Characterisation Report [APP-261] should be updated. The applicant submitted an updated Site Characterisation Report [REP4-013] and an Outline Sediment Disposal Management Plan (OSDMP) [REP4-038, updated to [REP6-049].	The ExA notes that the applicant has updated the sediment dispersion modelling in [REP6-053]. **RIES Q13: To NE: Confirm if you are content with the applicant's updated sediment dispersion**

ID	Issue	Details	ExA observation/ question
		NE [REP5-105] had no further comments to make on the Site Characterisation Report alone. It [REP5-105] commented on the OSDMP, noting that the volume of material to be disposed in the array area was up to 4 times more than previously stated. It was particularly concerned about the Kentish Knock East MCZ but stated that proposed measures may not be sufficient to avoid AEoI to the MLS SAC. Responding to the ExA's request [PD-013] for comment on the applicant's proposal to dispose of material anywhere in the area defined on Figure 2-1 of the OSDMP, NE [REP5-110] referred to [REP5-104], where it stated that modelling had not considered sediment dispersion near the SAC from disposal within the export cable corridor disposal site and requested clarification of the WCS for plume dispersion and associated deposition. NE [REP5-109] [REP6-089] recorded this as unresolved (amber) and requested an updated assessment based on increased disposal volumes. In response to the ExA's [PD-013] request for clarification about why the modelling [REP4-041] did not consider disposal activities related to the OCC, the applicant [REP5-054, Q10.0.11] stated that the model used mass flow excavation (MFE) throughout the OCC and array. The design envelope includes disposal along the OCC, but the effects would be less than the mass flow excavation, which represented the WCS. The applicant [REP6-059] stated that MFE would not require sediment disposal, as sediment is levelled by blasting the seabed with seawater. The applicant [REP6-059] stated that assessment of revised disposal volumes was provided in [REP4-041], which showed no change to the conclusion and therefore no AEoI. It updated the	**modelling. If not, set out what further measures you consider are needed to manage sediment disposal in a way that avoids AEoI to SAC. Provide reasons for your position.**

ID	Issue	Details	ExA observation/ question
		sediment dispersion modelling in [REP6-053] to include a simulation for dredging at the pilot boarding area (on the OCC) and concluded that the suspended sediment concentrations would be below 20mg/l and last no longer than 2 hours.	
3.1.6	In-combination effects	NE [RR-243, C38 and 39] advised that the RIAA [APP-175] in-combination assessments may require updating once further information was provided on impacts from cable protection and the worst cable rock protection requirements and any related secondary impacts within the SAC. The applicant [REP1-044] reiterated its comments about the WCS (see ID3.1.1 and ID3.1.2) and its commitment to a 150m buffer (see ID3.1.3). NE [REP5-109] [REP6-089] recorded no change on this matter, and it remained unresolved (amber). The applicant updated the Hydrodynamic and Dispersion Modelling Report [REP6-053] to include hydrodynamic modelling of cumulative effects with other proposed and constructed OWFs. It concluded that there would not be a cumulative effect, based on a 0.3% difference in current tidal speed and bed shear stress where there is no overlap between arrays, and a difference not exceeding 5% for the proposed development and Five Estuaries.	**RIES Q14: To the applicant: By Deadline 8, provide an updated RIAA Part 2 that includes an updated in-combination assessment to address NE's comments, and incorporating the additional cumulative modelling outcomes.**
3.1.7	AEoI conclusions for other LSE pathways	NE [RR-243] did not dispute the applicant's conclusions in [APP-175] of no AEoI from the following LSE pathways assessed for the proposed development alone or in combination with other projects and plans:	The ExA understands these matters to be agreed but seeks confirmation from NE. **RIES Q15: To NE: Confirm that these matters are agreed. If not, set out the**

ID	Issue	Details	ExA observation/ question
		• smothering (due to suspended sediment) during construction, operation and decommissioning, and • re-mobilisation of contaminated sediments during construction, operation and decommissioning.	**remaining concerns and your advice on the steps required to resolve them.**
MITIGATION			
3.1.8	Caveats in the Schedule of Mitigation	NE [RR-243, A27] raised concerns about use of terms such as 'where practicable' in the Schedule of Mitigation [APP-012] and requested an update to the document to clarify what is committed. The applicant [REP1-044] stated that the Schedule of Mitigation is a signposting document. It considered that the effects of the proposed development were mitigated to an acceptable level to the extent it was practicable to do so without compromising delivery of a critical national priority (CNP) infrastructure project. Regarding mitigation in the context of the Habitats Regulations, it stated that the HRA Derogation Provision of Evidence [APP-183] demonstrated no alternative solutions. The ExA [PD-013] sought assurance from the applicant that the mitigation proposed to avoid AEoI to the SAC would not be rendered ineffective because of flexibility in the Schedule of Mitigation. The applicant [REP5-054, Q10.012] stated that direct overlap of the SAC is secured through the order limits, with a further 150m buffer secured by Condition 36 of the DML (see ID3.1.3). Removal of GBS foundations is secured through removal from the dDCO [REP6-005]. NE [REP5-109] [REP6-089] showed this matter as unresolved (amber).	**RIES Q16: To NE: Confirm if you are satisfied that mitigation proposed for the MLS SAC is adequately secured based on the applicant's response in [REP5-054], and subject to supporting evidence for the 150m buffer as described above. If not, set out what further measures you consider are needed.**

ID	Issue	Details	ExA observation/ question
OUTER THAMES ESTUARY SPA – BENTHIC SUPPORTING HABITATS			
3.1.9	Assessment of pressures to benthic habitats, which provide habitat and prey for SPA features	NE [RR-243, P8, C3, C20, C33 and C37] considered there was a lack of robustness in the applicant's assessment of pressures and impacts on supporting benthic habitats and prey availability for SPA qualifying features. It requested updated information, modelling and assessment. The applicant [REP1-044] stated that impacts on supporting benthic habitats in the OTE SPA were assessed in the RIAA Part 2 [APP-175, section 2.5.3] and ES Chapter 10 [APP-024]. ES Chapter 13 [APP-027, sections 13.6.1.2, 13.6.2.4 and 13.6.2.6] assess indirect effects of changes to habitats and prey species on offshore ornithology receptors. In [REP3-064] [REP4-067] [REP5-109] [REP6-089] NE recorded no change, with it unresolved (amber). However, in response to a question from the ExA [PD-013] about what further information it needed given the applicant's response in [REP1-044], NE [REP5-110, Q10.0.12] stated that having reflected on its position for this project any further assessment of impacts to supporting benthic habitat for qualifying features of the OTE SPA was unlikely to materially change the conclusions and confirmed that it did not require any further action on this matter by the applicant.	The ExA understands this matter to be agreed between the applicant and NE to the extent it relates to the OTE SPA.

Annex II marine mammal matters

3.3.8 The following section of the RIES details the issues raised during the examination relating to marine mammal matters. Overarching issues are addressed first and site-specific issues are covered in table 3.2 below.

3.3.9 Table 3.2 sets out the ExA's understanding of matters raised during the examination in relation to AEoI of marine mammal European sites and the latest position of the applicant and IP's. To note, matters set out below may relate to the applicant's Environmental Statement but have been included in the RIES where they relate to the applicant's HRA conclusions. NE [RR-243] advised that the applicant should address the concerns it has raised and ensure that where the same approach is taken for the HRA, that changes or commitments to the ES should also be made to the HRA.

Reliance on Interim Population Consequences of Disturbance (iPCoD)

3.3.10 For marine mammals, discussion was raised in relation to the reliance on the use and conclusions of the iPCod modelling. NE [RR-243] did not agree with the project alone assessment of impacts from piling. NE recommended that the applicant update the iPCoD modelling results [APP-026] and [APP-176] and stated that impact significance should be presented on each approach taken to assessing disturbance, not just based on iPCoD modelling.

3.3.11 The applicant provided an update at Deadline 1, Further Information regarding Marine Mammals [REP1-057] to address the concerns of NE. This reiterated the calculations used to determine that there would be no significant impacts from the proposed development alone on harbour porpoise. The applicant also updated the cumulative effects assessment to address NE's concerns.

3.3.12 NE [REP4-059] welcomed the applicant's changes in line with its advice; however, NE had outstanding concerns regarding over-reliance on iPCod modelling as the key assessment tool. NE also considered that the least impactful outcomes resulting in non-significant effects had been chosen, that the assessment had not been carried out based on the most conservative method (for the project alone, cumulative and in-combination).

3.3.13 NE requested clarification on the impacts from the proposed development alone from underwater noise due to piling. It considered that other threats which could impact the population of harbour porpoise should be included in the model, such as prey availability, shipping and bycatch. NE also questioned the predicted outcomes for harbour seals whereby the mean impacted as % of unimpacted is higher than 100%. NE also raised a number of concerns regarding the cumulative assessment set out in section 2.6 of [REP1-057]. NE stated that the dose response outcome should not be ignored, as this method showed that over 30,000 harbour porpoise could be disturbed as a result of a single piling event.

3.3.14 NE also disagreed with how the applicant had assessed cumulative disturbance effects as set out in table 2-26 [REP1-057] as it considered that the least significant outcomes had been chosen which resulted in an assessment of low magnitude for cumulative disturbance. NE advised that figures presented in tables 2.10, 2.11 and 2.12 [REP1-057] should be used to

calculate the number of marine mammals which would be disturbed. This would result in a figure of 34,180 harbour porpoise being disturbed as a result of piling and a high magnitude.

3.3.15 NE advised that it disagreed with the interpretation and results of the applicant's in-combination assessment as set out in section 3 [REP1-057] and [REP4-059], stating that the same comments regarding the cumulative assessment also apply to the in-combination assessment of the applicant's HRA.

3.3.16 The ExA [PD-013] directed questions to the applicant, NE, MMO, Essex Wildlife Trust (EWT) and local authorities concerning the applicant's reliance on iPCod modelling and interpretation of results, impacts from piling, the applicant's cumulative/in-combination assessment, and proposed mitigation measures.

3.3.17 The applicant [REP5-055] in its response to NE's Deadline 4 comments, highlighted that all the different approaches used (ie iPCod, Effective Deterrent Range (EDR), and dose response) for the marine mammal assessment had been previously presented for the project-alone impacts either in the ES Chapter 12 [APP-026] or in the Further Information Regarding Marine Mammals technical note [REP1-057]. Specifically in respect of the in-combination assessment, the applicant [REP5-054] stated this was updated to include the EDR approach for assessing the SNS SAC for harbour porpoise and presented within its Further Information Regarding Marine Mammals [REP1-057] submitted at Deadline 1.

3.3.18 Concerning the applicant's assessment of piling and the consideration of other threats in the model (such as prey availability, shipping and bycatch), the applicant responded at Deadline 5 [REP5-054] that whilst an assessment of disturbance effects due to piling is provided, ES Chapter 12 [APP-026] also assessed interactions with other topics (at section 12.11) and inter-relationships between impacts (at section 12.12). The applicant provided a review of other potential long-term threats to marine mammals as a summary at section 2.2.1 of the Marine Mammal Assessment Clarification (MMAC) [REP5-069]. The applicant [REP5-069] stated that other threats to marine mammals at a population level over the lifetime of the proposed development have been considered and that the proposed development would reduce its project-alone contribution to additive cumulative disturbance through the commitment to develop and implement the Marine Mammals Mitigation Plan (MMMP) and SIP. The applicant concluded that its review indicated potential impacts on any marine mammal at a population level, over the proposed development's lifetime, are not expected to alter the overall significance of the effects presented in the cumulative assessment.

3.3.19 In response to NE's questioning of the applicant's conclusions for harbour seal [REP4-059], which identified that the mean impacted as % of unimpacted is higher than 100%, the applicant provided an explanation for these results at section 2.2.3 in the MMAC [REP5-069]. The MMAC [REP5-069] described the model runs and resulting variations. The applicant also identified that the incorrect plot for harbour seal was previously provided in [REP1-057]. The correct plot is now presented in plate 2.1 of [REP5-069].

3.3.20 With regards to representations made on cumulative/in-combination, together with the ExA questions in this regard [PD-013], the applicant provided further information and clarification on its cumulative assessment in section 2.2 of the MMAC submitted at Deadline 5 [REP5-069]. This included information using the dose response approach (table 2.3) and a comparison of the overall cumulative assessment using the dose response numbers and the iPCoD modelling approach (table 2.4).

3.3.21 With respect to comments from NE [REP1-057] and [REP4-059] and ExA question [PD-013] concerning how recent declines of harbour seals has been factored in to modelling and assessment, the applicant [REP5-054] stated that the recent declines in harbour seal populations were incorporated into the iPCoD model by using the worst-case demographic parameters for the similarly decreasing population on the Scottish East coast. The applicant [REP5-054] and [REP5-069] expands on the modelling parameters and variations.

3.3.22 In response to the comments of NE [REP1-057] and [REP4-059] and the ExA question [PD-013] concerning the dose response results which identifies that over 30,000 harbour porpoises (9.09% of the North Sea Management Unit (MU)) could be disturbed during a single piling event, the applicant provided further assessment and clarification in the MMAC [REP5-069]. The MMAC [REP5-069] expands on the applicant's position, which maintains that population modelling is the tool providing the most realistic understanding for the cumulative disturbance as it considers the consequences of disturbance (and potential auditory injury) over the long term, taking into account various species specific demographic parameters, such as MUs; the age where the calf / pup become independent, age of first birth, juvenile and adult survival, fertility and growth rate. The applicant states that if significance of effect relied solely on the dose response result, this would consider a snapshot in time.

3.3.23 The applicant has provided an updated table (table 2.3) [REP5-069] to show the assessment using dose response curve (DRC) results, which incorporates the updated cumulative effect assessment from Further Information Regarding Marine Mammals [REP1-057] and the DRC results. The table showing the DRC approach indicates that for the overall cumulative assessment and using a 'medium' sensitivity for all species, harbour porpoise is assessed as a 'major adverse' significant effect. Grey seal and harbour seal have a 'moderate adverse' significant effect. This is prior to the use of additional mitigation. The iPCod results in comparison conclude 'minor adverse' effects overall.

3.3.24 In respect of the HRA, the applicant [REP5-054] confirmed that the in-combination assessment was updated to include the EDR approach for assessing the SNS SAC for harbour porpoise, this update was included within Further Information Regarding Marine Mammals [REP1-057] at Deadline 1.

3.3.25 The applicant [REP5-069] acknowledged NE's concerns and has proposed further amendments to the draft MMMP, draft DCO and draft SIP. Updated versions of these documents have been provided at Deadline 5 [REP5-012] and Deadline 6 [REP6-029]

3.3.26 The applicant maintains that considering the overall evidence base, including the number of animals impacted at any one time and the duration of effects, the magnitude of the potential impact based on the population modelling (iPCoD) is the most appropriate and proportional to determine the overall significance of effects. The applicant states that any potential effects would be mitigated through the Final MMMP and SIP post consent in accordance with the draft MMMP (latest version [REP5-012]) and Outline SIP for the SNS SAC (latest version [REP5-014]. The applicant flagged that the Final SIP cumulative assessment would have to be based on the EDR approach, as per current guidance; therefore, this would consider the worst-case scenario at that point in time. The applicant states this approach has been used to inform the RIAA and Outline SIP.

3.3.27 See table 3.2 below in respect of mitigation and other matters raised during the examination.

Table 3.2: Marine mammals – key issues raised in the examination to date by the ExA and IPs in relation to the applicant's assessment of effects on integrity (alone and in-combination)

ID	Potential impact pathway	Details of issue	ExA observation/ question
Southern North Sea SAC			
3.2.1	Disturbance of harbour porpoise	Matters relating to iPCoD modelling and reliance are discussed above. NE (E3, E38) [REP3-067] advised it could not agree with the applicant's conclusion of no AEoI without a commitment to include mitigation such as a Noise Abatement System (NAS). NE considered that the applicant should commit to noise abatement in the Draft MMMP and SIP. NE advised that the effects of NAS should be considered in the assessment. EWT [REP4-055] in its SoCG with the applicant stated that the applicant should commit to specific measures, particularly NAS in the MMMP. It considered this should sit alongside a Working in Proximity to Wildlife Plan to reduce risks of collision and disturbance from ships, boats and other vessels. The Outline SIP for the SNS SAC [APP-243] updated by [REP5-014] stated that the use of NAS was being considered as part of the alone and in-combination mitigation options, but did not make a firm commitment to using these. The Deadline 5 Outline SIP [REP5-014] included amended text clarifying the applicant's approach on the use of noise reduction measures and/ or NAS at section 1.7.2.2. The Outline SIP explained that primary noise reduction methods could be	**RIES Q17: To NE, EWT and MMO Please review the applicant's amendments to the Outline SIP and Draft MMMP submitted at Deadline 5 and provide comment. Are you content with the applicant's wording in respect of NAS? If you have concerns, please expand. Does this document address your concerns regarding AEoI?**

ID	Potential impact pathway	Details of issue	ExA observation/ question
		achieved via impact piling modification such a using different installation techniques or adjusting piling energy. The following additional wording was included in respect of NAS: "If it is deemed necessary to apply noise reduction measures and/or a NAS for piled foundations, in order to comply with Government policy on underwater sound, or it is identified (during discussions with the MMO on the final plan following the final scheme design freeze post consent) as necessary mitigation to manage any predicted significant effects due to underwater sound from piling, then North Falls will be in a position (from a programme execution perspective) to implement such measures"	
3.2.2	Mitigation measures – MMMP and Working in Proximity to Wildlife Plan	The ExA [PD-013] asked EWT and the host authorities for a copy of the 'Working in Proximity to Wildlife Plan' document and to indicate the status/weight of this document/role in local decision making. The ExA [PD-013] noted that EWT/NE had advised that the applicant should commit to specific mitigation measures, particularly NAS, in the MMMP, and that the MMO acknowledged that EWT considered that this should sit alongside a Working in Proximity to Wildlife Plan to reduce the risk of disturbance from ships, boats and other vessels and the risk of them colliding with marine mammals. ECC and Tendring District Council (TDC) [REP5-091] stated that it is their understanding that a 'Working in Proximity to Marine Wildlife Plan' is expected to be prepared and submitted	**RIES Q18: To applicant, EWT, local authorities: Please confirm whether it has been agreed the Outline PEMP contains the necessary guidance and procedures in respect of marine mammal collision and that a separate Working in Proximity to Wildlife Plan is not deemed necessary.**

ID	Potential impact pathway	Details of issue	ExA observation/ question
		by the applicant. ECC and TDC observed that elements of a typical 'Working in Proximity to Marine Wildlife Plan' have largely been embedded in the Outline Project Environmental Management Plan (PEMP) submitted by the applicant at Deadline 3 [REP3-011], in particular within Appendix C (Vessel Good practice and Code of Conduct to Avoid Marine Mammal Collisions). ECC/TDC stated that given Condition 13 of the dDCO requires the undertaker to issue a code of conduct to operators of vessels and such code must be in accordance with the Outline PEMP, it is of the view that a separate document is not required. EWT did not provide a response to the ExA's second written questions; however, an updated SoCG between the applicant and EWT was provided at Deadline 5 [REP5-077]. The updated SoCG records that in respect of marine mammals, the matter of specific wording in the conditions of the marine licence to state that piling activity must cease in the event the monitoring highlights the noise impact is in excess of the predicted impacts is now 'agreed'. This follows an update to the draft DCO at Deadline 4 [REP4-004 and [REP4-005], to Schedule 8, Part 2, Condition 26(3); Schedule 9, Part 2, Condition 27(3); and Schedule 10, Part 2, Condition 26(3). In respect of specific mitigation measures to be included in the MMMP, including NAS, and mitigation measures for vessel/collision risk with reference to a Working in Proximity to	

ID	Potential impact pathway	Details of issue	ExA observation/ question
		Wildlife Plan, the draft SoCG [REP6-071] states this matter is agreed.	
3.2.3	Vessel disturbance	NE [REP5-106] confirmed that following its review of the applicant's Information Regarding Marine Mammal Disturbance due to Vessel Presence [REP3-046] document, it welcomed the additional assessment conducted in relation to vessel disturbance and consider this matter to be resolved. However, NE stated it expected the results of this updated assessment to be included in the cumulative and in-combination assessments with other activities during O&M and construction within the ES chapters 12 [APP-026] and RIAA Part 3 [APP-176].	**RIES Q19: to the applicant: Please confirm whether this information will be included in an updated ES Chapter 12 and RIAA**
3.2.4	Piling – notification	The ExA [PD-013] queried whether the MMO would be formally notified on which piling method is to be up taken in advance of any commencement independent of DML provision, and by which mechanism in the dDCO/DML would that be achieved. The applicant [REP5-054] and MMO [REP5-098] both confirmed that this is secured through the construction method statement in accordance with Condition 21(1)(c) of Schedule 8; Condition 22(1)(c) of Schedule 9; and Condition 21(1)(c) of Schedule 10 of the draft DCO (latest version [REP5-008] [REP5-009]). This secures that a construction method statement, including details of the foundation installation methodology must be approved by the MMO.	

ID	Potential impact pathway	Details of issue	ExA observation/ question
3.2.5	Mitigation – UXO and timings	During the examination, the applicant identified that UXO clearance cannot be scheduled to avoid the winter months but proposed an amendment to the Draft MMMP to make clear that if high-order clearance is required then NAS must be used. The applicant [REP5-054] confirmed in response to the ExA's question on this matter in [PD-013] that the amendment had been made to the Draft MMMP submitted at Deadline 3 [REP3-013]. NE were requested by the ExA [PD-013] to comment on the applicant's approach. NE [REP5-110] noted that a final MMMP for UXO clearance would be submitted for approval under a future Marine Licence application, separate from the DCO application. NE confirmed it would continue to engage with the applicant and review information provided on any potential temporal restrictions. NE acknowledged the amended Draft MMMP submitted by the applicant to make clear that if high-order clearance is required, then NAS must be used.	**RIES Q20: to NE: Do NE have any outstanding concerns on this matter? If so, please provide detailed comments.**
3.2.6	Mitigation measures – Passive Acoustic Monitoring (PAM) in respect of UXO clearance	In its RR, NE [RR-0243] stated that PAM is considered as a potential mitigation measure for UXO clearance. NE stated that acoustic monitoring should be undertaken alongside visual monitoring during clearance of UXO and stated that this should be included in the MMMP as a standard mitigation measure. In response, the applicant provided further information regarding marine mammals [REP1-057], together with its response to NE's RR [REP1-044]. The applicant [REP1-044] stated it has committed to the use of PAM for UXO clearance in	**RIES Q21: to NE: Can NE clarify if its concerns regarding the use of PAM in respect of UXO clearance are resolved?**

ID	Potential impact pathway	Details of issue	ExA observation/ question
		instances where there are unfavourable conditions such as sea state three or less. The applicant states that the Draft MMMP [APP-242] would be amended to make clear the applicant's commitments that 'UXO clearance would be performed during suitable conditions for both Marine Mammal Observers (MMObs) and PAM operators'. The applicant stated this change would be included in the Final MMMP post consent. The applicant provided updates to the Draft MMMP at Deadline 3 [REP3-013] and [REP5-012]. Section 1.4.2 of Draft MMMP [REP5-012] includes new wording and NE confirmed in [REP5-109] that this has resolved its concern on this matter. The ExA notes that NE's Appendix K - Risks and Issues Log [REP5-109] states at E32 that 'NE notes the position maintained by the applicant is not in line with NE advice and stated that as the project area is within the SNS SAC, PAM is required along with the visual monitoring.' It is unclear if this relates to the same matter that is resolved. NE is requested to clarify.	
3.2.7	Site Integrity Plan	The ExA queried the SIP Condition in the draft DML, which was advised by NE to be no sooner than nine months and no later than six months owing to in-combination impacts. The applicant [REP5-054] stated in response that table 1.2 of the Outline SIP (latest version [REP5-015]) provides an indicative programme for consultation on the Outline SIP around 12 months prior to foundation installation, and submission of the final SIP to the MMO for written approval by	

ID	Potential impact pathway	Details of issue	ExA observation/ question
		six months prior to installation. The consultation process for the SIP would ensure it is not submitted too early; therefore, in the applicant's view, timings are not required in the draft DCO. The applicant's position is that there are already adequate controls in place and the applicant understands this matter is agreed with the MMO. The MMO [REP5-098] noted in its Deadline 4 submission [REP4-079] that there is control to avoid approving a SIP document too early. The MMO explained that as part of the SIP process, it generally does a call for information eight to six months prior to the summer season and therefore this would fall into the timescale NE has requested. The MMO stated that it may occasionally receive/request information earlier than this, but it would be unable to discharge the full document prior to the call for information and review of the in-combination impact. The applicant amended the wording in table 1.2 of the Outline SIP [REP5-015] to reflect the agreed timeframe for the Final SIP, which states "No sooner than approximately nine months and no later than six months prior to foundation installation."	

Offshore ornithology

3.3.28 The following section of the RIES details the issues raised during the examination relating to offshore and intertidal ornithology matters. Overarching issues are addressed first and site-specific issues are covered in table 3.3 below.

Population viability analysis (PVA)

3.3.29 NE [RR-243, F27] confirmed that although it is seeking updates to the PVA, it did not anticipate that results of PVA analysis [APP-180] would be materially different due to variations in input parameters. However, it advised that the points set out below should be adopted, namely:

- the applicant's approach to apportioning for LBBG of AOE (see table 3.3 for detail)
- use of a four year burn in period rather than a five year burn in period
- disagreed that random seeds had been matched for impact scenarios
- disturbance and displacement of guillemot and razorbill FFC SPA

Duration of burn in period

3.3.30 NE [RR-243, F27] highlighted its advice that a five year burn in period should be applied to the assessment, rather than the four year burn in period applied by the applicant. The applicant [REP1-044] responded that a five year burn in period had been applied in its shadow appropriate assessment for guillemot at the Farne Islands SPA and confirmed that this would also be applied if any further PVA work is required for other European sites. At Deadline 5, NE [REP5-109] and [REP5-107] considered that this issue would be unlikely to make a material difference to the outcome of the decision-making process.

Effect of displacement mortality on PVA outcomes

3.3.31 The PVA as set out in [APP-080] has applied a 70% displacement and 2% mortality resulting in a reduction of population growth of 0.5%. NE [RR-243, G4] queried the results of the applicant's assessment. For the Sheringham Shoal and Dudgeon Extension Project, the use of the same figures resulted in a reduction of population growth by 1.4%. An explanation for the differing figures for reduction in population growth was provided by the applicant [REP3-039]. NE [REP5-107] raised concerns that the applicant had not re-run the PVAs for guillemot and razorbill apportioned to FFC SPA and highlighted that certain figures used in the PVA are substantially different to those used in the original assessment. NE provided a series of figures to demonstrate the differences between assessments for the proposed development and other offshore wind farms and advised that the PVAs should be updated. It was acknowledged by NE [REP5-017] that the applicant has used updated PVA parameters in the shadow appropriate assessment for the Farne Islands SPA. NE welcomed the commitment from the applicant to integrate the parameters into any further PVA.

3.3.32 The Royal Society for the Protection of Birds (RSPB) [REP4-089] also raised concerns regarding the applicant's methodology for assessing impacts on guillemot and razorbill arising through distributional responses.

Highly Pathogenic Avian Influenza (HPAI)

3.3.33 The RSPB [RR-294] and [REP4-089] noted the impacts of Highly Pathogenic Avian Influenza (HPAI) on UK wild bird populations. RSPB highlighted that survey work undertaken by RSPB in 2023 reported a decrease of >10% in overall counts across all sites which were surveyed. RSPB state that a further outbreak of HPAI occurred in 2023 which was after the survey counts were undertaken, therefore it is likely that the impacts of HPAI on breeding populations of seabirds is likely to worse than reported.

3.3.34 The RSPB also reported behaviour changes in seabirds subsequent to the HPAI outbreak and stated that this could affect interactions with wind farms. The RSPB raised concerns that the implications of HPAI had not been fully considered in the assessment and also raised a point regarding the potential need for reassessment of the Favourable Conservation Status of some SPA's.

3.3.35 The applicant [REP1-045] argued that adequate consideration of the impacts of HPAI has been included in the RIAA for qualifying features of relevant SPA's, notably gannet, kittiwake, guillemot and razorbill of FFC SPA, red-throated diver of OTE SPA and LBBG of AOE SPA. The applicant's assessment makes reference to the scale of effect for each species population and this is based upon annual reports on the seabird populations of relevant SPA's.

RIES Q22: to the RSPB: The applicant has responded to concerns relating to the consideration of impacts resulting from HPAI in its assessment [REP1-045]. Please provide comments on any outstanding concerns further to the justification provided in [REP1-045].

Digital Aerial Survey (DAS) methodology

3.3.36 The RSPB [RR-294] and [REP4-089] and [REP5-114] raised concerns regarding the DAS methodology, stating that further detail of the methodology should be provided alongside the outputs. The applicant [REP1-045] responded to the points raised by the RSPB explaining that the DAS method used was at a higher altitude than that recommended published guidance, however this was due to reducing disturbance to sensitive species. It was explained that the applicant [REP1-045] considered transect-based surveying to be the most efficient method to enable large areas to be covered, with fewer samples required than grid-based methods whilst achieving the same survey coverage. The possibility of autocorrection had been reviewed internally and determined there was no substantive evidence of spatial autocorrection.

RIES Q23: to the RSPB: Given the information provided by the applicant in [REP1-045] can the RSPB explain if it has outstanding concerns regarding the DAS methodology?

In-combination effects

3.3.37 IPs raised concerns relating to the assessment of in-combination effects provided in the RIAA, these were regarding collision risk, and disturbance and displacement effects to the LBBG feature of AOE SPA and the gannet, kittiwake, guillemot and razorbill features of FFC SPA.

Assessment conclusions

3.3.38 NE [RR-243] and the RSPB [RR-294] disputed the estimated effects of the proposed development on some species and clarification was sought regarding impacts on the following:

- guillemot, razorbill, gannet and kittiwake feature of the AOE SPA
- guillemot feature of the Farne Islands SPA
- LBBG of AOE SPA
- red-throated diver of OTE SPA

3.3.39 These matters are set out below in table 3.3.

Table 3.3: Offshore ornithology – key issues raised in the examination to date by the ExA and IPs in relation to the applicant's assessment of effects on integrity (alone and in-combination)

ID	Potential impact pathway	Details of issue	ExA observation/ question
Alde-Ore Estuary SPA and Ramsar site			
3.3.1	Apportioning of LBBG	NE [RR-243, F24] stated that the Apparently Occupied Nests (AON) figures used in the applicant's assessment is larger than that used by Five Estuaries offshore wind farm (1880 and 1749 respectively). NE advised that the use of a larger population could result in an underestimation of the scale of impacts. NE considered that the figure used by Five Estuaries was the most appropriate and should also be used for the proposed development. At Deadline 1, the applicant submitted HRA Update to Breeding Season Apportioning of LBBG at AOE SPA [REP1-058] which includes additional LBBG colonies within the apportioning as well as most recent count data. Based on the revised apportioning, 42.7% of adult lesser black backed gulls present in the array area during the breeding season are predicted to have come from the AOE SPA. This figure is a reduction from the 56% estimated in the more precautionary apportioning documented in RIAA Part 4 [APP-178]. In its Risk and Issues Log [REP4-067], NE recorded this matter as being resolved. Outstanding matters regarding compensation for LBBG are discussed in section 4 of this RIES.	

Farne Island SPA			
3.3.2	In-combination effects on guillemot	In its RIAA Part 4 [APP-178] the applicant concluded that there would be no AEoI on the Farne Islands SPA, either alone or in-combination. It identified that in-combination mortality based on 50% displacement and 1% mortality would result in less than 0.1% deaths. NE [RR-243, F3] and (F3 and F26) [REP3-064] did not agree with the conclusions of no AEoI and stated that it considered that the proposed development could have in-combination effects with other plans and projects, including from Berwick Bank and other North Sea projects on the guillemot feature of the Farne Islands SPA. NE requested that the applicant undertook a full in-combination assessment of impacts on guillemot at the Farne Islands SPA. The applicant submitted a HRA Shadow Appropriate Assessment for guillemot at the Farne Islands SPA [REP1-056]. This included a full in-combination assessment with displacement matrices as well as consideration of displacement and mortality rates of 50% and 1% and 70% and 2%, the latter being requested by NE. The applicant's in-combination assessment concluded that by applying a 70% displacement and 2% mortality rate, three adult guillemots would be predicted to die as a result of displacement from the proposed development. NE responded at Deadline 4 [REP4-063] stating it was content with the general approach of the in-combination assessment and it welcomed the inclusion of displacement matrices. However, NE considered there had been some	

		inconsistency with population counts considered for offshore wind farms projects for the guillemot feature of the Farne Islands SPA which therefore affected the calculation of baseline mortality rate and predicted changes to that rate. NE noted that the baseline characterisation data used by the applicant was collected over 2019 and 2020 breeding seasons which is a time when the breeding colony at the Farne Islands was heavily impacted by HPAI in 2022/23. NE advised that colony counts used for the assessment should be at the same time as baseline characterisation data. NE noted that the applicant had applied a correction factor of 0.67 based on published guidance.NE considered that this data is now dated, and it was not aware that ongoing monitoring was taken place at the Farne Island SPA which could ascertain if the correction factor applied is appropriate. NE considered that application of a generic correction factor is more appropriate to estimate an indicative number of breeding pairs at a colony unless a colony specific correction factor has been derived, for example from photographed productivity plots or mapping. NE also confirmed that it would not expect to draw different conclusions even if the smaller population had been considered in the applicant's assessment. NE stated that it considered there would not be AEoI of the guillemot feature of Farne Island SPA from the proposed development alone, however, NE maintained its position that there would be an AEoI resulting from in-combination effects.	

		The comments submitted by NE were noted by the applicant [REP5-055], however, no response was provided.	
Flamborough and Filey Coast SPA (FFC SPA)			
3.3.3	Disturbance and displacement to guillemot and razorbill	In the RIAA Part 4 [APP-178] the applicant concluded no AEoI for the razorbill and guillemot features of FFC SPA, both alone and in-combination. NE disagreed with this conclusion, stating that the in-combination effects of offshore wind farms are already at a level where it cannot rule out adverse effects and that the proposed development would be adding to this impact. NE conceded that project alone impacts are relatively small, though it could still not rule out AEoI. Further input from IPs regarding this issue related to the derogations case and is discussed in Chapter 4 of this RIES.	
3.3.4	Collision risk – operation and maintenance - kittiwake	Although NE [RR-243, F39] agreed that the project alone impacts for kittiwake were relatively small, it could not rule out AEoI from in-combination effects. NE noted that the proposed development apportioned 0.8 collisions for kittiwake per year as a result of the proposed development and none of these are during the breeding season and therefore the in-combination contribution is small. NE referred to the Supplementary Advice on Conservation Objectives (SACO) attribute target which is to restore the breeding population and the potential for the impacts from proposed development to be considered with other offshore wind projects. Regarding in-combination effects, the applicant [REP2-011] estimated 0.76 collision mortalities per annum using a	

		central impact value (CIV) and 2.72 collision mortality per annum using a upper confidence level (UCL). The RSPB [RR-294] and [REP4-089] raised concerns regarding the assessment of in-combination effects undertaken for the proposed development. It stated that the assessment for kittiwake was not adequate as it did not include impacts from the breeding season, nor potential impacts which may arise as a result of distributional change.	
3.3.5	Collision risk and displacement mortality – operation and maintenance - gannet	The applicant concluded no AEoI on the gannet qualifying feature of FFC SPA both alone and in combination with other plans or projects. The RSPB stated [RR-294] and [REP4-089] that it had concerns regarding the applicant's application of a macro avoidance correction factor to predict gannet collision mortalities. The RSPB disputed the applicant's choice of avoidance rate for gannet and also the use of a 70% correction factor for baseline densities. The RSPB explained its preferred methodology for assessing mortality from collision was McGregor et al (2018) (McGregor, R.M., King, S., Donovan, C.R., Caneco, B. and Webb, A. (2018) A Stochastic Collision Risk Model for Seabirds in Flight. Report to Marine Scotland Science) which allows for uncertainty and variability of parameters to be made. The RSPB advised that a 98% avoidance rate should be presented alongside the recommended values as it considered this was more appropriate for breeding gannets. The applicant confirmed [REP5-056] that it had followed guidance from Natural England regarding Collision Risk	

		Modelling, which included the application of macro-avoidance via a reduction in 70% in the flight densities of gannet within the array area during all seasons. Avoidance rates recommended by Natural England were also used. No further comments had been made by the RSPB in relation to the methodology for the assessment of effects on the gannet qualifying feature at the point of publication of this RIES. No HRA concerns were raised by NE regarding northern gannet.	
Outer Thames Estuary SPA (OTE SPA)			
3.3.6	Effects on red throated divers – disturbance and displacement.	In the RIAA Part 6 Summary [APP-182] the applicant concluded no AEoI for the red-throated diver feature of the OTE SPA both alone and in combination. It stated that although it did not disagree that displacement effects could not be ruled out from existing offshore wind farm displacement, it did not consider that the proposed development would present a material contribution to any in-combination effect. Both NE [RR-243, F1] and RSPB [RR-294] disagreed with the applicant's conclusions and considered that the proposed development could result in AEoI both alone and in-combination on the red-throated diver feature of the OTE SPA. NE [RR-243, F34] also expressed concern regarding how the applicant presented the total area of overlap of OTE SPA with the order limits of the proposed development. The area of the resulting overlap is 108.7km2. The applicant then excludes the areas in the overlap area of existing	

		offshore wind farms which results in an area of 54.5km2 affected by the proposed development alone. NE requested that the area of overlap was investigated and the area closest to the proposed development should be calculated.	
3.3.7	Effects on red throated divers – disturbance and displacement.	NE [RR-243, F35, P23] raised concerns regarding disturbance and displacement of red-throated diver during installation of the export cable. It requested a seasonal restriction between November and March when the area if used by over wintering red-throated divers. NE requested that installation or decommissioning should not take place within the OTE SPA +2km buffer. The applicant did not consider that a seasonal restriction is required as it has determined no AEoI resulting from the proposed development. Furthermore, the applicant highlighted that a seasonal restriction would affect works both in and outside of 2km of the SPA	
3.3.8	Conservation objectives	RSPB [RR-294] and [REP4-089] considered that the applicant had not fully considered the conservation objectives relevant to the population of RTD at OTE SPA. NE [243] advised that the proposed development would contravene the SACO attributes. The applicant [REP1-045] considers that due to the existing level of disturbance in the 12km buffer zone as a result of shipping lanes and other offshore wind farms, the proposed development would not lead to a detectable effect on the distribution of red-throated divers.	

Onshore ecology

3.3.40 The following section of the RIES details the issues raised during the examination relating to ornithology related matters.

Table 3.4: Onshore ornithology – key issues raised in the examination to date by the ExA and IPs in relation to the applicant's assessment of effects on integrity (alone and in-combination)

ID	Potential impact pathway	Details of issue	ExA observation/ question
Stour and Orwell Estuaries SPA and Ramsar site			
3.4.1	Undefined	The RIAA Screening Report [APP-174] screened in LSE on these sites. Further detail was provided in RIAA Part 5 [APP-181] which identified the potential for effects during construction and decommissioning on: • direct impacts on functionally linked land (FLL) which supports qualifying features of the site due to habitat loss • direct impacts on qualifying features from noise and visual disturbance in FFL • indirect impacts on FLL which support qualifying features of the site due to air quality emissions or changes in supporting surface or groundwater resources. The RIAA Part 5 [APP-181] concluded there would be no AEoI to either the Stour and Orwell Estuary SPA or Ramsar site. However, a response from NE, [REP2-054] stated that '*the features for which outstanding concerns remain are unknown as the impacts are yet to be assessed*'. The ExA [PD-013] asked NE to confirm if it agreed with the conclusions	**RIES Q24: to NE: With reference to the justification provided in [APP-181] in which the applicant concluded no AEoI on the Stour and Orwell Estuaries SPA and Ramsar site, is NE in agreement that the proposed development would not result in AEoI on these sites. If NE disagree, please set out the reasoning.**

		of the applicant as set out in [APP-181]. The response provided by NE at Deadline 5 referred to detail in Appendix C5 however this document refers to benthic ecology matters.	
Orfordness-Shingle Street SAC			
3.4.2	Pathways relevant to qualifying habitats, plants and invertebrates.	The RIAA Screening Report [APP-174] screened this site out from further assessment as it was stated that it is beyond the range of potential impact (39km). However, the applicant had included Orfordness-Shingle Street SAC as a potential location for compensation measures for LBBG of the AOE SPA [APP-188]. NE raised concerns [RR-243, H10] that compensation measures suggested for LBBG could have an AEoI of the qualifying features of the Orfordness-Shingle Street SAC. It was confirmed by the applicant [REP1-017] that Orfordness-Shingle Street site was no longer being considered as a potential compensation site as the site was being used by another offshore windfarm (Galloper) and there was no longer potential for the proposed development to add material ecological benefit in this area. This issue is now considered resolved at [REP4-067].	
Alde-Ore Estuary Ramsar site			
3.4.3	Wetland invertebrate and plant assemblage	NE in [RR-243] cited wetland invertebrate and plant assemblage as other qualifying features for which it had concerns. However, this did not form part of the Risk and Issues Log. The ExA [PD-009] queried whether the concerns of NE regarding this matter remained outstanding. NE responded [REP2-054] stating that evidence would be necessary to ensure that these communities along with other invertebrate and plant assemblages would not be impacted by the installation and maintenance of predator fencing and the	**RIES Q25: to NE: Does NE agree with the conclusions of the applicant with respect to impacts on invertebrate assemblage and plant assemblage of AOE Ramsar site?**

		management of the compensation area, should it be located within those parts of the Ramsar site that host these features. The applicant, [REP4-010] assesses potential for impacts resulting from compensation measures for LBBG and provides reasoning as to why there would not be AEoI to the invertebrate assemblage and overall plant assemblage of the AOE Ramsar site.	

3.4 Summary of Examination outcomes in relation to adverse effects on integrity

3.4.1 As noted in previously in this RIES, the applicant agreed prior to the examination that an AEoI of the following European site and feature cannot be excluded:

- Alde-Ore Estuary SPA – in-combination collision risk on lesser black-backed gull

3.4.2 This site and feature is therefore the subject of a derogation case submitted by the applicant [APP-188], as detailed in Sections 4 and 5 of this RIES.

3.4.3 NE disagreed with the conclusions of the applicant regarding the guillemot feature of the Farne Islands SPA and could not rule out AEoI. However, it considered that compensation measures for guillemot at FFC SPA could be scaled up to also provide compensation for guillemot of the Farne Islands SPA.

3.4.4 To date in the examination, the matters identified in tables 3.1, 3.2 and 3.3 of this RIES in respect of disputed AEoIs remain unresolved. The ExA seeks responses from the applicant and ANCB, where indicated, to provide clarity on the outstanding matters.

3.4.5 The ExA's understanding of the applicant's and NE's current positions is set out in Annex 1 of this RIES.

4 DEROGATIONS FROM THE REGULATIONS

4.1 Overview

4.1.1 The applicant submitted a derogation case relating to the LBBG feature of AOE SPA. Details of the compensation measures are provided in [APP-188] and are secured in Schedule 15 of the draft DCO [AS-022].

4.1.2 The applicant's RIAA concluded no AEoI on the red-throated diver feature of the OTE SPA, and kittiwake, guillemot and razorbill features of the FFC SPA, however, the applicant submitted 'without prejudice' derogations cases for the following:

- guillemot and razorbill feature of the FFC SPA [APP-194] updated by [REP1-027]
- kittiwake features of FFC SPA [APP-192] updated by [REP2-011]
- red-throated diver feature of OTE SPA [APP-190] updated by [REP1-021]

4.1.3 As noted in section 3 of this RIES, NE was unable to rule out AEoI for the guillemot feature of the Farne Islands SPA. This is addressed in table 4.1 below.

4.1.4 The applicant's RIAA [APP-175] concluded no AEoI on the Annex I sandbank feature of the MLS SAC. As noted in section 3 of this RIES, NE was unable to rule out AEoI but advised that it may be able to do so subject to the applicant providing further information including clarification on the WCS and modelling.

4.1.5 The ExA [PD-013] asked the applicant to comment on whether it had considered preparation of a 'without prejudice' derogation case for this feature in light of the requirement in paragraph 5.4.27 of NPS EN-1. The applicant [REP5-054, Q10.0.11] stated that it had provided further substantial evidence at Deadline 4 (as described in table 3.1 of this RIES) to support its conclusions of no AEoI. It stated that there is no precedent of derogation and compensation for indirect effects on sites designated for benthic qualifying features.

4.1.6 Whilst the question was not directed at NE, in responding to other parts of the question NE [REP5-110] advised that subject to the provision of further information it should be possible, and was likely, it would be able to advise that AEoI can be excluded by the close of examination.

RIES Q26: to NE and the applicant: Based on submissions to date, whilst NE advises it should be possible to exclude AEoI, at Deadline 6 it is still not in a position to do so. Noting the limited time remaining in the examination, the ExA is concerned that it may not be possible for the competent authority to exclude AEoI beyond reasonable scientific doubt on MLS SAC. As such, and in line with the relevant NPS EN-1, the ExA requests confirmation from NE and the applicant at Deadline 7 that they have reached agreement that AEoI on MLS SAC can be excluded. If the applicant is unable to reach agreement with NE by Deadline 7, the ExA

considers that a derogations case is required and should be provided by the applicant for Deadline 7. This can be provided on a without prejudice basis. This is to enable the ExA to examine information during the examination and make a recommendation to the SoS, and so that the SoS has all information available to them at the point of decision.

4.2 Alternative solutions

4.2.1 The applicant provided its 'no alternative solutions' case in Habitats Regulations Derogation Provision of Evidence [APP-183] updated by [REP6-007]. This sets out the need for the proposed development and the overall objectives of the proposed development. Section 5.2 describes the project objectives as delivering low carbon electricity in support of decarbonisation of the UK electricity supply, supporting commitments of the UK offshore wind generation and to coordinate and optimise generation and export capacity whilst delivering employment and investment.

4.2.2 Section 5.4 of [REP6-007] describes the progress of identification and consideration of a long list of potential sites, further refined to produce a short list for consideration.

4.2.3 The alternatives documents in the applicant's assessment are alternative wind farm locations, a smaller rotor/swept area, increased air gap, alternative scale, design, method and timing. The applicant's assessment of alternatives included consideration of a 'do nothing' scenario. The feasibility of the various options is set out in section 5.5. The applicant concludes that the identified alternatives are either not feasible or do not meet the project objectives and therefore there are no alternative solutions to the proposed development.

4.2.4 As of Deadline 5, no comments have been received from any IP on matters relating to the consideration of alternative solutions.

4.3 IROPI case

4.3.1 The applicant provided its IROPI case in Habitats Regulations Derogation Provision of Evidence [APP-183].

4.3.2 The ExA (Q1.1.1 [PD-009]) sought clarification from the applicant about the contribution the proposed development might make to achieving the Government's objective for delivering 50 gigawatts (GW) of offshore wind generation by 2030. The ExA considered that the anticipated generating capacity would be information required if it is necessary to weigh any effects from the proposed development against any public interest benefits including in respect of the Habitats Regulations.

4.3.3 The applicant [REP2-020] stated that it has secured a grid connection agreement that would allow for a connection capacity of 1,000 MW (1 gigawatt (GW)). The generating capacity of the proposed development is expected to be approximately 1 GW but will depend on the final selection of wind turbine types. This would contribute approximately 2% towards the Government's

target of delivering 50 GW by 2030. The applicant referred to the Overarching NPS for Energy (NPS EN-1), which states that the need for OWF is demonstrated and urgent, and that the SoS "is not required to consider separately the specific contribution of any individual project to satisfying the need established in this NPS."

4.3.4 The ExA (Q1.1.3 [PD-009]) also requested comments on the compatibility of a 7-year time limit for commencement in the dDCO [APP-005] relative to the Government policy ambition for delivery of 50GW by 2030.

4.3.5 The applicant [REP2-020] stated that it is seeking to deliver the proposed development as soon as possible and that it is well suited to delivery ahead of the 2030 target but explained that it must allow for the reasonable worst-case when drafting the dDCO, including delays that are unforeseen or outside of its control. The applicant referred to Hornsea Four and SADEP as examples of DCOs granted with the same 7-year period for commencement. It noted that NPS EN-1 and Powering Up Britain support the urgent need for renewable electricity generating projects including offshore wind, with a clear need to deliver projects as soon as possible, if possible before 2030 but also thereafter.

4.3.6 As of Deadline 5, no comments have been received from any IP on this matter.

4.4 Compensatory measures

4.4.1 The details of the compensatory measures (CM) proposed by the applicant for the LBBG feature of AOE SPA and Ramsar site were provided in:

- Lesser black backed gull compensation document [APP-188] updated by [REP1-017], [REP4-010] and [REP6-011]
- Outline Lesser black-backed gull compensation and Implementation and Monitoring Plan [APP-189] updated by [REP1-019] and [REP6-013]

4.4.2 The applicant also proposed CM on a 'without prejudice' basis for the following features:

- Guillemot and Razorbill Compensation Document [APP-194] updated by [REP1-027] and [REP6-023]
- Kittiwake Compensation Document [APP-192] updated by [REP2-011] and [REP6-019]
- Red-throated Diver Compensation Document [APP-190] updated by [REP1-021] and [REP6-015]

4.4.3 THE CM documents were supported by the following implementation and monitoring plans:

- Outline Guillemot and Razorbill Compensation Implementation and Monitoring Plan [APP-195] updated by [REP1-029] and [REP6-025]
- Outline Kittiwake Compensation and Implementation and Monitoring Plan [APP-193] updated by [REP1-025] and [REP6-021]
- Outline Red-throated Diver Compensation Implementation and Monitoring Plan [APP-191] updated by [REP1-023] and [REP6-017]

4.4.4 The Compensatory Measures Overview [APP-184] updated by [REP1-015] and [REP6-009] provides an overview of information regarding CM proposed by the applicant.

RIES Q27: to the applicant: Can the applicant provide an updated version of the Compensatory Measures Overview document to reflect updates in compensation measures being required?

4.4.5 The Compensatory Measures Overview is supported by a Compensation Funding Statement [APP-186] which outlines the estimated costs of the potential CM (including those provided on a 'without prejudice' basis) proposed by the applicant. Paragraph 15 confirms that the applicant is confident that sufficient funds are, or would be available to deliver the CM.

RIES Q28: to the applicant: Can the applicant provide an update of the Compensation Funding Statement which reflects changes in compensation?

4.4.6 The potential for the applicant to make a financial contribution to a Marine Recovery Fund (MRF) is included in the Compensatory Measures Overview [APP-184] updated by [REP6-009]. The ExA [PD-013] queried the confidence of the applicant in delivery compensation via the MRF when it is currently unsure when this process will come into effect. The applicant [REP5-054] confirmed that the proposed CM do not rely upon the MRF and therefore CM are able to be delivered in the event the MRF is delayed.

4.4.7 The CM relied upon for LBBG is secured by Schedule 15 of the dDCO [REP5-008] updated by [REP6-005]

4.4.8 The CMs proposed on a 'without prejudice' basis were not secured within the dDCO submitted by the applicant. At the request of the ExA [PD-013], the applicant provided 'without prejudice' compensation schedules for guillemot and razorbill, kittiwake and red-throated diver [REP5-065] updated by [REP6-057]. The drafted schedules have been provided in a form which can be inserted into Schedule 15 of the dDCO if deemed necessary. The submitted wording provides for CM through project led proposals or contributions through the MRF.

RIES Q29: to NE: Can NE confirm if they consider the content of the without prejudice compensation schedules [REP5-065] to be sufficient? If NE have outstanding concerns, please set this out.

Ornithology compensatory measures

Lesser black-backed gull of AOE SPA

4.4.9 The applicant initially identified the following potential CM in the Lesser black-backed gull Compensation Document [APP-188]:

- Project-led compensation comprising breeding enhancement via predator exclusion, habitat management and/or disturbance management.
- Strategic compensation delivered by Defra with the applicant making appropriate contributions to the MRF.

4.4.10 The details of the measures and associated monitoring would be provided in the LBBG Implementation and Monitoring Plan. The CIMP would be produced post-consent and the information it would contain is outlined in [APP-189] updated by [REP1-019] and [REP6-013].

4.4.11 A number of issues were raised by IPs relating to compensation for LBBG and these are set out table 4.1 below.

Guillemot of Farne Islands SPA

4.4.12 This matter is discussed further in table 4.1 below.

4.4.13 *Guillemot and Razorbill of FFC SPA*

4.4.14 The potential CM identified by the applicant in the Guillemot and Razorbill Compensation Document [APP-194] were:

- Project-led compensation consisting of measures to reduce recreational disturbance at one or more breeding colonies in the south-west.
- Strategic compensation delivered by Defra in the form of contribution to the MRF.

4.4.15 The details of project-led measures and associated monitoring would be provided in a Guillemot Compensation Implementation and Monitoring Plan (CIMP) and/or razorbill CIMP. The CIMP would be competed post consent if required and details of the information it would contain is outlined in [REP1-029] updated by [REP6-025].

4.4.16 NE [REP4-061] welcomed the potential for collaborative work with other offshore windfarms in the delivery of CM and encouraged the applicant to continue to investigate collaborative options for delivery of compensation measures.

4.4.17 As set out above, a ‘without’ prejudice’ compensation schedule has been provided by the applicant for guillemot and razorbill [REP5-065] updated by [REP6-057].

4.4.18 NE raised a number of concerns in relation to CM which are discussed in table 4.1. below.

Kittiwake of FFC SPA

4.4.19 The applicant initially identified the following potential CM in the Kittiwake Compensation Document [APP-192] updated by [REP2-011] and [REP6-019].

- project led compensation comprising of use of an existing artificial nesting structure (ANS) constructed by RWE in Gateshead
- strategic compensation delivered by Defra in the form of contribution to the MRF.

4.4.20 The applicant has set out that it would adopt responsibility for its portion of the ANS at least three breeding seasons prior to operation of the proposed development. It also stated that an agreement will be secured with RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited as the current owners [APP-192].

4.4.21 The details of project-led measures and associated monitoring would be provided in a Kittiwake Compensation Implementation and Monitoring Plan (CIMP). The kittiwake CIMP would be produced post-consent if required and the information it would contain is outlined in [APP-193] updated by [REP1-025] and [REP6-021].

4.4.22 As set out above, a 'without' prejudice' compensation schedule has been provided by the applicant for kittiwake [REP5-065] updated by [REP6-057].

Red-throated diver of OTE SPA

4.4.23 The applicant initially identified the following CM in the Red-throated Diver Compensation Document [APP-190] updated by [REP1-021] and [REP6-015]

- enhanced breeding habitat for example through nesting rafts/habitat management
- creation of sanctuary or reserve areas within the OTE SPA
- contribution to a strategic fund, though the applicant noted that compensation for red-throated diver is not currently listed on the Defra (2024b) library of measures.

4.4.24 The details of project-led measures and associated monitoring would be provided in a Red-throated Diver Compensation Implementation and Monitoring Plan (CIMP). The red-throated diver CIMP would be produced post-consent if required and the information it would contain is outlined in [APP-191] updated by [REP1-023] and [REP6-017].

4.4.25 As set out above, a 'without' prejudice' compensation schedule has been provided by the applicant for red-throated diver [REP5-065] updated by [REP6-057].

4.4.26 Further detail is provided in table 4.1 below.

Table 4.1 Ornithology – key issues raised in the examination to date by the ExA and IPs in relation to the applicant's proposed compensatory measures

ID	Issue	Details	ExA observation/ question
Lesser black-backed gull of AOE SPA			
4.1.1	Scale/extent of measure	The applicant [APP-188] stated that an area of 4ha is likely to be required for LBBG compensation, particularly if predator fencing is required. NE [RR-243, G30] and [REP4-060] was broadly supportive of the extent of the proposed area. However, NE had outstanding concerns over apportionment of benefits if collaborative measures were to be used as this would result in a proposed contribution of 0.2ha. NE were concerned that delivery of 0.2ha in place of a project alone site of 4ha would not be sufficient. At Deadline 6 [REP6-013] the applicant stated that it considers the compensation required for the proposed development is to support 20 breeding pairs if located in or adjacent to the AOE SPA or 36 breeding pairs if located at a remote site. The applicant states that based on predicted nesting density of 0.04-0.047 pairs per m^2, within or adjacent to the SPA, and area of 0.05ha would be required. However, the applicant confirmed in [REP6-011] that an area of at least 4ha will be selected if predator fencing is adopted.	**RIES Q30: to NE: Does NE have outstanding concerns regarding the scale/extent of compensation required for LBBG of AOE SPA? If NE have outstanding concerns, please set this out.**
4.1.2	Quantum of compensation	The applicant has used the Hornsea 4 approach to identify the scale of compensation needed. Initially NE advised use of the Hornsea 3 Part 2 approach, but it was later recognised [REP4-060] that use of the Hornsea 3 Part 2 method for	**RIES Q31: to NE: Does NE have outstanding concerns regarding the quantum of**

		LBBG can produce disproportionate requirements for the scaling of CM. It also highlighted an issue with demographic information not necessarily being well evidenced. Therefore, NE agreed the most appropriate method for determining scale of CM was the Hornsea 4 method. It was considered by NE [REP4-060] that CM should be scaled using the UCI impact value, applying the H4 method with additional consideration of philopatry (if necessary) to derive the quantum. Application of a 3:1 ratio to generate the number of pairs the measure should, theoretically, be able to accommodate and likely nesting densities should be considered to define a minimum area. The applicant welcomed advice from NE on the acceptability of use of the Hornsea 4 method and provided updated compensation scales based on this value, alongside the mean or central impact value (CIV) at Deadline 6 [REP6-011].	**compensation required for LBBG of AOE SPA?**
4.1.3	Timing and mortality debt	NE [RR-243, G31] explained that there is potential for there to be a delay of LBBG using the compensation sites which could lead to a mortality debt accruing if the CM were implemented. NE advised that the compensation site should be made available prior to LBBGs returning to their nesting sites in late February and before Year 1 to allow pairs to scope the areas before nesting commences (April). NE advised that paragraph 5 of Schedule 15 should be amended to reflect that compensation should be in place four full breeding seasons prior to operation. The applicant at Deadline 5 [REP5-054] maintained its position of implementing CM three breeding seasons prior to operation. It argues that a difference of one year would result in a	

		mortality debt of 2.3 collisions and this can already be compensated for as a result of the proposed 4ha compensation site. The position of both parties remained unchanged at Deadline 6 and paragraph 6 of the dDCO [REP6-005] still refers to the implementation of three breeding seasons.	
4.1.4	Landowner agreement and location for compensation site	NE [RR-243, G32] raised concerns that none of the compensation sites being considered had been secured. Sites were considered at Lantern Marshes, Orfordness-Shingle Street, Outer Trial Bank and a site referred to as VE2 which is the preferred compensation site for Five Estuaries offshore wind farm. As the examination progressed, the applicant [REP1-017] chose to no longer include Orfordness-Shingle Street as a site for compensation, though the other sites referred to above remained as potential options. The National Trust [RR-241] and the Statement of Common Ground with the National Trust [REP3-051] confirmed that the National Trust considers land at Lantern Marshes to be a suitable site for LBBG compensation, capable of providing undisturbed nesting habitat. Discussions between the applicant and relevant landowners are documented in the Habitats Regulations Assessment Land Rights Tracker [REP5-067].	
4.1.5	Alternative sites – Lantern Marshes	The potential for locating CM for LBBG at Lantern Marshes was considered in [APP-188] and [REP1-018]. NE [REP4-060] considered this site was a viable option in principle. It was recognised by IPs that use of sites for LBBG compensation could result in effects on designated sites	**RIES Q32: to the applicant: Can the applicant respond to concerns raised by NE in its Deadline 5 submission [REP5-108].**

		which had not previously been assessed. In response, the applicant submitted Lesser Black-backed Gull Compensation Effects on Designated Sites [REP4-010] which assesses potential for effects on AOE SPA and Ramsar site and Orfordness-Shingle Street SAC should the Lantern Marshes option be selected for the proposed from the proposed use of land at Lantern Marshes. Concern was raised by NE [REP5-108] that the assessment had been based on assumptions and therefore NE did not consider the conclusions to be evidence based or robust. NE raised concerns specifically in relation to works relating to installation of culverts for ditch crossings which will require tracking of heavy machinery through designated habitats. NE was also concerned that installation of fencing was suggested to take place outside of LBBG breeding season, yet no consideration of effects on over wintering birds had taken place. Further concerns regarding lifespan of the fencing and lack of surveys being undertaken to support conclusions regarding 'low quality' habitat. At Deadline 6, Lantern Marshes remained an option under consideration [REP6-011].	
4.1.6	Alternative sites – Outer Trial Bank/VE2	The potential for locating CM for LBBG at Outer Trial Bank and the preferred option for Five Estuaries known as VE2 was considered in [APP-188] and [REP1-018]. The RSPB [RR-294] and [REP4-089] expressed concern regarding a lack of information available to inform understanding of the ecology of Outer Trial Bank, current influences on LBBG productivity and the implications of rat eradication and	

		management. At the point of its Deadline 5 submission, the RSPB [REP5-114] did not consider that Outer Trial Bank was capable of progression as suitable compensation. At Deadline 6, the applicant confirmed that Outer Trial Bank and VE2 remained as options under consideration for potential adaptive management and /or collaboration options.	
4.1.7	Alternative sites – Gedgrave Marshes	The potential for locating CM for LBBG at Gedgrave Marshes was considered in [APP-188] and [REP1-018]. The RSPB [REP4-089] considered that the site was unsuitable due to levels of disturbance by walkers and dog walkers. NE [REP4-060] considered this site was a viable option in principle. NE [REP5-110] raised concerns regarding the potential for Gedgrave Marshes to be functionally linked to designated sites and considered it could be used by waterbird qualifying features if those sites are SPAs. The ExA sought clarification from the applicant as to whether the implementation of CM at Gedgrave Marshes may result in LSE/AEoI on nearby designated sites. The Habitats Regulations Assessment Lesser Black-backed Gull Compensation – Gedgrave Marshes Impact Assessment [REP5-072] provided by the applicant, reports on an assessment of potential effects on designated sites within 1km of Gedgrave Marshes. It did not identify any pathways for direct or indirect effects on any sites considered. The Impact Assessment concluded no AEoI on any of the designated sites identified. At Deadline 6, NE [REP6-088] considered this matter had progressed but was not yet resolved. It considered that the conclusion of the impact assessment of no LSE/AEoI is	**RIES Q33: to the applicant: Please respond to points raised by NE [REP6-088] particularly in relation to potential impacts of fence installation and maintenance.**

		based on a site visit and desk-based studies and is therefore not an evidence based conclusion. The applicant in [REP6-059] confirms that baseline surveys will be undertaken post consent/pre-construction. Furthermore, NE [REP6-088] raised concern that the impact assessment had not considered the implications of fence installation and maintenance on the adjacent RSPB Wader Project.	
4.1.8	Monitoring	The applicant's approach to monitoring as set out in [REP1-018] was queried by NE [REP4-060] who considered the approach to be insufficient. It considered that the approach to monitoring should be discussed and agreed with the LBBG Compensation Steering Group (LBCSG). The LBBG CIMP [REP6-013] explains that compensation would be overseen by the LBCSG, and that monitoring would be undertaken until such time that the compensatory measure is found to be delivering the scale of required compensation. Adaptive management would be undertaken if deemed necessary.	**RIES Q34: to NE: With regard to the Deadline 6 submission from the applicant [REP6-013], does NE have any outstanding concerns regarding monitoring for LBBG?**
Guillemot of Farne Islands SPA			
4.1.9	Scale of compensation	In [RR-243] NE could not rule out AEoI for guillemot features of the Farne Islands SPA. As such, NE advised that compensation would be required. Based on 70% displacement and 2% mortality, the applicant determined that the proposed development would result in mortality of three adult birds per year [REP1-056]. In its Deadline 4 submission NE [REP4-063] stated it may be possible that the CM	**RIES Q35: to NE: The applicant has proposed a without prejudice schedule 15 for guillemot and razorbill which includes compensation measures for guillemot of the Farne**

		proposed by the applicant for guillemot of FFC SPA could be scaled to also compensate for the impact on the guillemot feature of the Farne Islands SPA. This would then result in a separate derogations case no longer being required. The ExA [PD-013] asked NE to confirm the approach it considered was appropriate for scaling up the CM and in response, NE explained [REP5-110] that the approach of the new compensation should account for the level of total mortality from both colonies.	**Islands SPA. Is NE content that the measures included in the without prejudice schedule 15 satisfy its requirements for guillemot of the Farne Islands SPA? if not, please explain outstanding concerns.**
Guillemot and razorbill of FFC SPA			
4.1.10	Evidence base	NE [RR-243, P24, G1, G2 and G3] and RSPB [RR-294] and [REP4-09] considered that the applicant had not evidenced occurrences of recreational disturbances at the auk colonies referred to in the Guillemot and Razorbill Compensation Document [APP-194]. This document was updated at Deadline 1 to include ecological evidence to understand the ways in which recreational activities can result in disturbance to guillemot and razorbill. The applicant explained that it was planning to conduct surveys of breeding guillemot and razorbill which would inform the final guillemot and razorbill CIMP. Concern was also raised by NE with regards to the date of colony counts and highlighted that the latest colony counts were from 2017.To further inform baseline, the ExA [PD-013] requested the applicant provide information regarding colony counts and disturbance monitoring. The applicant confirmed it had commissioned surveys of the short-listed auk colonies set out in [REP1-027] during the 2025 breeding season and	

		that the surveys would update baseline counts, productivity and monitoring of disturbance and reaction of auks to disturbance.	
4.1.11	Scale of compensation	NE [RR-243, F26] disagreed with the applicant's compensation quantum and advised use of a 70% displacement and 2% mortality scenario. RSPB [REP4-089] stated its preferred approach of use of 60% displacement and a range of mortality rates of between 3% and 5% during the breeding season and 1% to 3% in the non-breeding season. The applicant [REP1-027] presented NE's displacement and mortality values, though it maintained that it continued to present the 50% displacement and 1% mortality scenario as it considered this was the most precautionary scenario and was based on available evidence and expert opinion. The applicant stated that it was possible for compensation to be scaled to 70% and 2% if required. The applicant has used the Hornsea 4 approach to identify the scale of compensation needed. Initially NE advised use of the Hornsea 3 Part 2 approach, but it was later recognised [REP4-060] that use of the Hornsea 3 Part 2 method for guillemot and razorbill can produce disproportionate results for the scaling of CM. It also highlighted an issue with demographic information not necessarily being well evidenced. This justification resulted in agreement from NE that the most appropriate method for determining scale of CM for guillemot and razorbill was the Hornsea 4 method.	**RIES Q36: to NE: Can NE confirm if it agrees with the scale of compensation set out in the applicant's submission [REP6-023]**

		At Deadline 5, the applicant maintained its position that quantification of the effect based upon 50% displacement and 1% mortality is appropriate and that a compensation ratio of 2:1 is appropriate. At Deadline 6, the applicant [REP6-023] in the Guillemot and Razorbill Compensation Document set out its latest scale of compensation. This is based on a ratio of 50% displacement and 1% mortality which results in 20 breeding pairs of guillemot (11 pairs for FFC SPA and nine pairs for the Farne Islands SPA). If compensation is also deemed necessary for razorbill, the applicant states that five breeding pairs of razorbill should be provided for. Using a scenario of 70% displacement and 2% mortality, the figures increase to 54 pairs for guillemot (30 (29.2) for the FFC SPA and 25 (24.7) pairs for the Farne Islands), and 11 (10.8) pairs for razorbill at the FFC SPA.	
4.1.12	Timescales of compensation	NE [RR-243, G5] disagreed with the seasonal extent of compensation measures proposed by the applicant. It considered that compensation measures aimed at reducing recreational disturbance should be in place prior to the breeding season. NE [RR-243, A21] highlighted that the applicant plans to implement CM three breeding seasons prior to operation. By taking this approach, NE raised concerns that this could result in mortality debt on guillemot and razorbill populations as these birds do not reach breeding age maturity until approximately six years old and therefore it would take seven breeding seasons after CM are implemented for young birds	

		produced as a result of the CM to enter the breeding population. NE suggested that the scale of CM be increased to address the risk of 'mortality debt' accruing in the early years of the proposed development. The applicant [REP1-027] disagreed that the requirements should be increased to deal with mortality debt and argued that the accrued mortality debt would remain very small if it were accrued. The outline Guillemot and Razorbill CIMP at Deadline 1 stated that the CM would be deployed three breeding seasons before the operational phase of the proposed development [REP1-029]. In the outline Guillemot and Razorbill CIMP submitted at Deadline 6 [REP6-025], the position of the applicant remained that deployment of CM would be three breeding seasons prior to the operation of the proposed development.	
4.1.13	Landowner agreement	NE [RR-243, G6] raised concern that proposed sites had not yet been secured with relevant landowners. The applicant [REP1-044] maintained its position that compensation for guillemot and razorbill was not required. If it were determined by the SoS that compensation was required, this would be secured post consent. The applicant stated that it was confident suitable compensation could be achieved if required, and confirmed it is in discussion with other offshore windfarms to discuss the potential for collaboration. The Habitats Regulations Assessment Land Rights Tracker [REP5-067] confirms the status of final site selections as 'to	**RIES Q37: to the applicant: Can the applicant provide an update of its ongoing discussions with landowners regarding site selection and access arrangements.**

		be confirmed' owing to ongoing stakeholder consultation and survey work.	
4.1.14	Monitoring and adaptive management	Strategic long-term monitoring longer than the three years proposed by the applicant was requested by NE. The applicant [REP5-054] agreed that longer term monitoring post implementation may be required and confirmed in the outline Guillemot and Razorbill CIMP [REP6-025] that annual monitoring will be undertaken for the first three years or until the CM is found to be successful. Monitoring will be undertaken for the lifetime of the proposed development and the frequency of the monitoring will be agreed with the Guillemot and Razorbill Compensation Steering Group (GRCSG) (or Guillemot Compensation Steering Group if the SoS concludes no AEoI for razorbill) and agreed with the SoS. At the request of the ExA [PD-013] the applicant provided an updated outline Guillemot and Razorbill CIMP [REP6-025] which provides additional information regarding possible adaptive management measures, it is stated that this could include identifying alternative sites for compensation or pursuing a collaborative or strategic measure.	**RIES Q38: to NE: Is NE content with the approach of the applicant as set out in [REP6-025] that the detail of post implementation monitoring will be agreed with the Guillemot and Razorbill Compensation Steering Group (or Guillemot Compensation Steering Group)?**
Kittiwake of FFC SPA			
4.1.15	Scale of compensation required	The applicant proposed a 1:1 compensation ratio (based on Hornsea 4) for kittiwake which would result in the requirement for an additional seven to ten breeding pairs. NE [RR-243] disagreed with the compensation ratio considered by the applicant, explaining that a ratio of 1:1 is	**RIES Q39: to NE: Can NE respond to the applicant's position in [REP6-019] that it will provide for ten nesting spaces on the ANS?**

		only appropriate where there is a high confidence level that compensation measures will succeed. It advised the use of a 3:1 compensation ratio (Hornsea 3 Part 2 approach) which would be in line with advice commissioned by The Crown Estate to inform the Round 4 strategic plan for kittiwake. NE considered this would result in a greater number of nesting pairs and offer a more realistic prospect of the CM delivering benefits. NE [REP4-062] provided calculations of its preferred approach (Hornsea 3 Part 2) to the level of compensation it considered is required. This identified that use of a 2:1 or 3:1 ratio would result in the measure of provision being 34 or 51 nest space respectively. Whereas use of a 1:1 ratio would result in 5 pairs. At Deadline 6 [REP6-019] the applicant provided updated compensation calculations to include the Hornsea 3 Part 2 method alongside the Hornsea 4 method it concluded that the proposed development should provide ten nesting spaces on the ANS.	
4.1.16	Delivery mechanism and sharing arrangements of the Gateshead Kittiwakery	NE [RR-243, G19] and the RSPB [REP4-089] considered there was uncertainty regarding collaboration and agreement between the applicant and other offshore wind projects. NE raised a concern that the requirement for nesting pairs may exceed the space available at the ANS and also [REP4-062] sought clarification from the applicant on how sufficient nesting for seven to ten pairs of kittiwake would be possible. The applicant [REP5-054] explained that there are 240 nesting spaces available at the ANS which are expected to be shared equally between the proposed development and	

		four other offshore wind farms. The proposed development will therefore secure 48 nesting spaces at the ANS. The applicant pointed out that this figure is expected to exceed the level of compensation required for this species from the proposed development. The applicant reported that monitoring would be undertaken by an experienced ornithologist and requirements for monitoring will be secured in the Kittiwake CIMP. Furthermore, the applicant explained that if monitoring demonstrated that CM were unsuccessful, adaptive management would be required which could include further enhancements works of the ANS such as playback calls and decoy birds. Further to this, an alternative ANS could be considered or a contribution made to the MRF. Discussions between the applicant and Dogger Bank South offshore wind farm relating to securing CM for kittiwake is documented in the Habitats Regulations Assessment Land Rights Tracker [REP5-067].	
4.1.17	Method of compensation	NE explained that the British Trust for Ornithology (BTO) had been commissioned to undertake a critical review of available compensation measures and determine the most appropriate for the proposed development. The report entitled “Review of methods used to calculate scale of artificial nesting structures proposed as a compensation measure for Kittiwake mortality at offshore wind farms” was submitted at Deadline 6 [REP6-087]. The key recommendations made in this report are an approach similar to Hornsea 3 but framed as a matrix	**RIES Q40: to the applicant: Can the applicant explain whether it will amend the contents of the kittiwake compensation document as a result of findings from the BTO report?**

		population model with parameter constraints to ensure the ANS will be self-sustaining. This includes: • Modelling a staggered entry into the breeding population from age three. • Use of the maximum breeding productivity out of the estimated SPA breeding productivity or that required for the ANS to be self-sustaining (as determined by an appropriate population model). • Estimates of potential maximum rates of net dispersal conditional on a self-sustaining ANS population (as determined by an appropriate population model). Seven requirements for monitoring are detailed. Adaptive management strategies are recommended to be used if the compensation measures are found to be unsuccessful.	
4.1.18	Timescales for compensation	The RSPB [REP5-115] considered that ANS should be established four breeding seasons prior to the operation of any part of the proposed development. It explained that this was based on the breeding ecology of kittiwake which has an expected period of first breeding at four years. The RSPB has remaining concerns that there is uncertainty whether ANS (either on or offshore) would be successful.	
Red-throated diver of OTE SPA			
4.1.19	Scale and extent of CM	NE [RR-243, G16, G17, G24] and [REP3-061] and the RSPB [REP4-089] considered that the CM proposed would not result in sufficient gains for the RTD population. CM proposed by the applicant includes installation of nesting rafts/habitat measures at 20 sites which could result in five to	**RIES Q41: to NE: Do NE agree that peatland management as set out by the applicant [REP1-021] could result in an additional**

		seven additional RTD juveniles entering the population each year. NE [REP3-061] argued that a further calculation should be run regarding juvenile survival rates as it considered that based on the assumption that six chicks would fledge, only two of these would survive into adulthood. The applicant [REP4-028] agreed with NE regarding the number of RTD which would survive into adulthood and noted there was potential for increased benefits from peatland management measures. The applicant outlined that habitat management at 20 lochs could result in an estimated additional 3.4 adult birds per annum. At the time of writing this RIES, the applicant maintains that the proposed development will not result in AEoI of RTD of OTE SPA and that no compensation is required. However, it considers the scale of compensation proposed is sufficient to deliver benefits if required.	**3.4 adult birds per annum? Please set out any outstanding concerns regarding compensation measures for red-throated diver.**
4.1.20	Location of CM	Initial locations for CM proposed by the applicant [APP-190] included locations in Finland, however, NE [RR-243, G37] were concerned that the applicant had not demonstrated sufficient control over rafts deployed in Finland. By Deadline 1, [REP1-022] the applicant was no longer pursuing this option and instead had chosen to focus on lochs located in Scotland and habitat management. Details of habitat management and peat restoration at locations in Shetland were provided in [REP1-021] and [REP1-022]. The updated outline RTD CIMP submitted by the applicant at Deadline 6 [REP6-017] explained that surveys to confirm the presence of suitable locations for RTD compensation have	**RIES Q42: to NatureScot: Is NatureScot in agreement with the proposed without prejudice compensation measures in Scotland for red-throated divers? If not, please set out any concerns and how they may be managed.**

		started in 2025. Further surveys will continue in 2025 and post consent.	
4.1.21	Landowner agreement for compensation sites	NE raised concerns [REP4-067] over a lack of properly short listed or secured sites and as negotiations with landowners were ongoing, there was uncertainty if sufficient sites can be secured for the lifetime of the project. This concern was echoed by RSPB [REP4-089] who considered greater detail was needed regarding arrangements of access and permissions.	
4.1.22	Monitoring and adaptive management	NE [REP3-061] raised concerns regarding the monitoring arrangements set out by the applicant. NE disagreed with the statement that monitoring would be required '*for the first three years or until the measure is deemed to be operating successfully*'. NE sought longer term monitoring to ensure that CM remained effective for the lifetime of the proposed development. The applicant emphasised that the need for longer term monitoring is set out in the outline RTD CIMP [REP4-036] and further explained [REP5-054] and [REP6-017] that monitoring would be undertaken yearly to ensure breeding success. However, the frequency of monitoring may reduce after three years and should be balanced against unnecessary disturbance. Nesting rafts would be checked yearly outside of the breeding season to ensure they remain in good condition. If, after three years of monitoring, CM were identified to be unsuccessful, the applicant would adopt adaptive management measures as set out in [REP4-036]. The applicant explained that adaptive management measures	**RIES Q43: to NE: Given the information provided by the applicant [REP5-054] regarding monitoring and adaptive management for red-throated diver. Do NE have outstanding concerns on this matter?**

		would be reactive to reasons for failure as identified during monitoring. The applicant, at Deadline 6 [REP6-017] provided an updated outline RTD CIMP which states that where required, 20 control lochs will be considered to facilitate monitoring. A comparison will be made between control lochs and lochs with rafts, the establish breeding success. Data from breeding success on the Scottish mainland will be used to assess the success of the rafts. The updated outline RTD CIMP confirms that control lochs will not be required for peatland management. Further detail is provided in [REP6-017] regarding adaptive management techniques. It is stated that adaptive management is likely to be undertaken on a loch-by-loch basis. Remote cameras may be used to observe nests in lochs which have not be successful to help determine the cause for failure. Adaptive management may then include predator control or mitigation, measures to reduce disturbance, further peatland management/restoration and vegetation management.	

5 CONCLUDING REMARKS

5.0.1 This RIES is based on information submitted throughout the examination by the applicants and IPs, up to Deadline 6 (24 June 2025), in relation to potential effects on European sites. It should be read in conjunction with the examination documents referred to throughout.

5.0.2 The RIES has identified gaps in the ExA's understanding of IPs' positions on Habitats Regulations and comments on the RIES will be of great value to the ExA in order to support a robust and thorough recommendation to the Secretary of State. In particular, the ExA seeks:

- Responses to the questions identified in Sections 1 to 5 of this RIES
- Confirmation whether the ExA's understanding of screening and adverse effects conclusions at point of RIES publication (Tables A.1 to A.5 in Annex 1) is correct.

5.0.3 Comments on the RIES must be submitted for D8 (23 July 2025).

ANNEX 1 EXA'S UNDERSTANDING OF POSITION AT POINT OF RIES PUBLICATION

5.0.4 The tables in this annex summarise the ExA's understanding of the applicant's screening exercise and assessment of effects on integrity, and agreement with the relevant ANCB(s)/IP's at time of publication of this RIES.

Key to tables:

C = Construction

O = Operation

D = Decommissioning

✓ = LSE or AEoI cannot be excluded

X = LSE or AEoI can be excluded

Y = Yes

N = No

? = Unclear

n/a = not applicable

Table A1: Benthic ecology

Note that the conclusions recorded in the table below apply to impacts from the proposed development alone and in combination, unless otherwise stated.

European site	**Qualifying feature screened in**	**LSE pathway (C, O and D unless otherwise stated)**	**NE agrees that AEoI can be excluded**
Margate and Long Sands SAC	H1110 Sandbanks which are slightly covered by sea water all the time	Changes to suspended sediment concentrations and bedload transport	No
		Smothering Re-mobilisation of contaminated sediments	?

Table A2: Marine mammals

Note that the conclusions recorded in the table below apply to impacts from the proposed development alone and in combination, unless otherwise stated.

European site	**Qualifying feature screened in**	**LSE pathway (C, O and D unless otherwise stated)**	**NE agrees that AEoI can be excluded**
Humber Estuary SAC and Ramsar	Grey seal	Underwater noise Barrier effects Collision risk Changes to prey Changes to water quality	Yes
Southern North Sea SAC	Harbour porpoise	Underwater noise Barrier effects Collision risk Changes to prey Changes to water quality	No
The Wash and North Norfolk Coast SAC	Harbour seal	Underwater noise Barrier effects Collision risk Changes to prey Changes to water quality	Yes

Table A3: Offshore ornithology

Note that the conclusions recorded in the table below apply to impacts from the proposed development alone and in combination, unless otherwise stated.

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Alde-Ore Estuary SPA and Ramsar site	Sandwich tern, breeding	Disturbance/displacement O&M Collision risk O&M	?	N/A
	Lesser black-backed gull, breeding	Collision risk O&M	Yes	N/A
	Avocet, breeding Avocet, non-breeding Marsh harrier, breeding Redshank, non-breeding Ruff, non-breeding Notable assemblage of breeding and wintering wetland birds	Collision risk O&M	?	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Outer Thames Estuary SPA	Red-throated diver (non-breeding)	Disturbance/displacement C Effects to supporting benthic habitats from change to processes, extent and distribution of habitat, contamination or turbidity that could affect the distribution, abundance and availability of prey	Yes	N/A
	Common tern (breeding)	Collision risk O&M	?	N/A
Foulness SPA and Ramsar	Sandwich tern, breeding Common tern, breeding Avocet, breeding Ringed plover, breeding Bar-tailed godwit, wintering Dark-bellied brent goose, wintering Grey plover, wintering Hen harrier, wintering Knot, wintering Oystercatcher, wintering	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Redshank, wintering, passage Waterbird assemblage			
Flamborough and Filey Coast SPA	Gannet, breeding	Disturbance/displacement O&M Collision risk O&M	Yes	N/A
	Seabird assemblage, breeding	Disturbance/displacement O&M Collision risk O&M	?	N/A
	Kittiwake, breeding	Collision risk O&M	Yes	N/A
	Guillemot, breeding Razorbill, breeding	Disturbance/displacement O&M	Yes	N/A
Sandlings SPA	Nightjar, breeding Woodlark, breeding	Collision risk O&M	Yes	N/A
Minsmere-Walberswick SPA and Ramsar	Avocet, breeding Marsh harrier, breeding Nightjar, breeding Shoveler, breeding Shoveler, wintering Teal, breeding	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Gadwall, breeding Gadwall, wintering White-fronted goose, wintering Hen harrier, wintering Assemblage of rare breeding birds associated with marshland and reedbeds			
Deben Estuary SPA and Ramsar	Avocet, wintering Dark-bellied brent goose, wintering	Collision risk O&M	Yes	N/A
Hamford Water SPA and Ramsar	Avocet, wintering Black-tailed godwit islandica, wintering Dark-bellied brent goose, wintering Grey plover, wintering Redshank, wintering, passage	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Ringed plover, wintering, passage Shelduck, wintering Teal, wintering			
Stour and Orwell Estuaries SPA and Ramsar	Avocet, breeding Black-tailed godwit, wintering Dark-bellied brent goose, wintering Dunlin, wintering Grey plover, wintering Knot, wintering Pintail, wintering Redshank, wintering Redshank, autumn passage Waterbird assemblage	Collision risk O&M	?	N/A
Thanet Coast and Sandwich Bay SPA and Ramsar	Golden plover, wintering Turnstone, wintering	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Benacre to Easton Bavents SPA	Marsh harrier, breeding	Collision risk O&M	Yes	N/A
Colne Estuary SPA and Ramsar	Pochard, breeding Ringed plover, breeding Dark-bellied brent goose, wintering Black-tailed godwit islandica, wintering Hen harrier, wintering Redshank, wintering Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A
Broadland SPA and Ramsar	Marsh harrier, breeding Bewick's swan, wintering Hen harrier, wintering Ruff, wintering Gadwall, wintering Shoveler, wintering Whooper swan, wintering	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Wigeon, wintering			
Stodmarsh SPA and Ramsar	Gadwall, breeding Gadwall, wintering Bittern, wintering Hen harrier, wintering Shoveler, wintering Breeding bird assemblage Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A
Dengie SPA and Ramsar	Dark-bellied brent goose, wintering Grey plover, wintering Hen harrier, wintering Knot, wintering Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A
Blackwater Estuary SPA and Ramsar	Pochard, breeding Ringed plover, breeding Black-tailed godwit islandica, wintering	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Dark-bellied brent goose, wintering Dunlin alpina, wintering Grey plover, wintering Hen harrier, wintering Waterbird assemblage, wintering			
Abberton Reservoir SPA and Ramsar	Coot, wintering Gadwall, wintering Goldeneye, wintering Great crested grebe, wintering Mute swan, wintering Pochard, wintering Shoveler, wintering Teal, wintering Tufted duck, wintering Wigeon, wintering Waterbird assemblage, late summer passage/moult	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Crouch and Roach Estuaries SPA and Ramsar	Dark-bellied brent goose, wintering Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A
Breydon Water SPA and Ramsar	Common tern, breeding Avocet, wintering Bewick's swan, wintering Golden plover, wintering Lapwing, wintering Ruff, passage Waterbird assemblage	Collision risk O&M	Yes	N/A
The Swale SPA and Ramsar	Dark-bellied brent goose, wintering Dunlin alpina, wintering Redshank, passage Grey plover, wintering Breeding bird assemblage Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Benfleet and Southend Marshes SPA and Ramsar	Dark-bellied brent goose, wintering Dunlin alpina, wintering Grey plover, wintering Knot, wintering Ringed plover, wintering Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A
Thames Estuary and Marshes SPA and Ramsar	Avocet, wintering Black-tailed godwit islandica, wintering, passage Dunlin alpina, wintering Grey plover, wintering Hen harrier, wintering Knot, wintering Redshank, wintering Ringed plover, passage Waterbird assemblage	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Medway Estuary and Marshes SPA and Ramsar	Avocet, breeding & wintering Dark-bellied brent goose, wintering Dunlin alpina, wintering Grey plover, wintering Knot, wintering Pintail, wintering Redshank, wintering Ringed plover, wintering Shelduck, wintering Breeding bird assemblage Waterbird assemblage, wintering	Collision risk O&M	Yes	N/A
Breckland SPA	Nightjar, breeding Stone curlew, breeding Woodlark, breeding	Collision risk O&M	Yes	N/A
Dungeness, Romney Marsh and Rye Bay	Sandwich tern, breeding Common tern, breeding Avocet, breeding	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
SPA and Ramsar	Marsh harrier, breeding Aquatic warbler, passage Bewick's swan, wintering Bittern, wintering Golden plover, wintering Hen harrier, wintering Ruff, wintering Shoveler, wintering Mute swan, wintering Waterbird assemblage, wintering			
North Norfolk Coast SPA	Sandwich tern, breeding Common tern, breeding	Collision risk O&M	Yes	N/A
Chichester and Langstone Harbours SPA	Sandwich tern, breeding Common tern, breeding	Collision risk O&M	Yes	N/A
Solent and Southampton Water SPA	Sandwich tern, breeding Common tern, breeding	Collision risk O&M	Yes	N/A

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Teesmouth and Cleveland Coast SPA	Common tern, breeding	Collision risk O&M	Yes	N/A
Coquet Island SPA	Sandwich tern, breeding Common tern, breeding Arctic tern, breeding	Collision risk O&M	Yes	N/A
Farne Islands SPA	Sandwich tern, breeding Common tern, breeding Arctic tern, breeding	Collision risk O&M	?	N/A
	Guillemot, breeding	Disturbance/displacement O&M	No	N/A
Forth Islands SPA	Sandwich tern, breeding Common tern, breeding Arctic tern, breeding Lesser black-backed gull, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
	Gannet, breeding	Collision risk O&M Disturbance/displacement O&M	Yes	? NatureScot has not participated in

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
				the examination to date
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	Sandwich tern, breeding Common tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Loch of Strathbeg SPA	Sandwich tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
The Wash SPA	Common tern, breeding	Collision risk O&M	Yes	N/A
Inner Moray Firth SPA Common	Common tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Cromarty Firth SPA Common	Common tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
				to date
Northumbria Coast SPA	Arctic tern, breeding	Collision risk O&M	Yes	N/A
Pentland Firth Islands SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Auskerry SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Rousay SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Fair Isle SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
West Westray SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Papa Westray (North Hill and Holm) SPA	Arctic tern, breeding Arctic skua, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Sumburgh Head SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
				to date
Mousa SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Foula SPA	Arctic tern, breeding Great skua, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
	Guillemot, breeding Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Papa Stour SPA	Arctic tern, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Fetlar SPA	Arctic tern, breeding Great skua, breeding	Collision risk O&M	Yes	? NatureScot has not participated in

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
				the examination to date
Fowlsheugh SPA	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
	Kittiwake, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
Troup, Pennan and Lion's Heads SPA	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
East Caithness Cliffs SPA	Guillemot, breeding Razorbill, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
	Herring gull, breeding	Collision risk O&M	Yes	? NatureScot has

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
	Kittiwake, breeding			not participated in the examination to date
North Caithness Cliffs SPA	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Marwick Head SPA	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Noss SPA	Guillemot, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
	Gannet, breeding	Collision risk O&M Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
	Gannet, breeding	Collision risk O&M	Yes	?

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Hermaness, Saxa Vord and Valla Field SPA		Disturbance/displacement O&M		NatureScot has not participated in the examination to date
	Great skua, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
	Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Hoy SPA	Great skua, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
	Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
Ronas Hill - North Roe and Tingon SPA	Great skua, breeding	Collision risk O&M	Yes	? NatureScot has not participated in the examination to date
	Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Caithness and Sutherland Peatlands SPA	Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Otterswick and Graveland SPA	Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination to date
Orkney Mainland Moors SPA	Red-throated diver, breeding	Disturbance/displacement O&M	Yes	? NatureScot has not participated in the examination

European site	Qualifying feature screened in	LSE pathway (C, O and D unless otherwise stated)	Does NE agree to conclusions on AEoI?	NatureScot agrees that AEoI can be excluded
				to date

Table A4: Onshore ornithology

Note that the conclusions recorded in the table below apply to impacts from the Proposed Development alone and in combination, unless otherwise stated.

European site	Qualifying feature screened in	LSE pathway (C and D unless otherwise stated)	NE agrees that AEoI can be excluded
Hamford Water SPA	Little tern (breeding)	Disturbance within European site (direct) Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct)	Yes
	Avocet (wintering) Dark bellied brent goose (wintering) Shelduck (wintering) Teal (wintering) Ringed plover (wintering) Grey plover (wintering) Black-tailed godwit (wintering) Redshank (wintering)	Disturbance within European site (direct) Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct) Indirect effects on functionally linked land	Yes

European site	Qualifying feature screened in	LSE pathway (C and D unless otherwise stated)	NE agrees that AEoI can be excluded
Hamford Water Ramsar	Ringed plover (migration) Common redshank (migration) Dark bellied brent goose (wintering) Black-tailed godwit (wintering) Grey plover (wintering)	Disturbance within European site (direct) Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct) Indirect effects on functionally linked land	Yes
Stour and Orwell Estuaries SPA	Waterbird assemblage	Disturbance within European site (direct) Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct) Indirect effects on functionally linked land	?
Stour and Orwell Estuaries Ramsar	Waterfowl assemblage (wintering)	Disturbance within European site (direct) Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct) Indirect effects on functionally linked land	?
Colne Estuary (Mid-Essex Coast Phase 2) SPA	Little tern (breeding) Dark-bellied brent goose (wintering) Waterbird assemblage (breeding)	Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct) Indirect effects on functionally linked land	Yes
Colne Estuary (Mid-Essex Coast Phase 2) Ramsar	Waterfowl assemblage (wintering) Dark bellied brent goose (wintering)	Disturbance on functionally linked land (direct) Habitat loss on functionally linked land (direct) Indirect effects on functionally linked land	Yes

Table A5: Onshore ecology

Note that the conclusions recorded in the table below apply to impacts from the proposed development alone and in combination, unless otherwise stated.

European site	**Qualifying feature screened in**	**LSE pathway (C and D phases)**	**Does NE agree to no AEoI?**
Hamford Water SAC	Fisher's estuarine moth	Indirect disturbance from noise Indirect disturbance from visual/lighting Indirect effects from changes in supporting surface or groundwater resources Direct and indirect effects on ex-situ habitats	Yes