Department for Business, Energy & Industrial Strategy

THANET EXTENSION OFFSHORE WIND FARM

Record of the Habitats Regulations Assessment undertaken under Regulation 63 of the Conservation of Habitats and Species Regulations 2017, and Regulation 28 of the Conservation of Offshore Marine Habitats and Species Regulations 2017

and

Transboundary Assessment

May 2020

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Background

1.1 This is a record of the Habitats Regulations Assessment ("HRA") that the Secretary of State for Business, Energy and Industrial Strategy has undertaken under the Conservation of Habitats and Species Regulations 2017[3] ("the Habitats Regulations") and the Conservation of Offshore Marine Habitats and Species Regulations 2017[4] ("the Offshore Habitats Regulations") (which implement the EU Habitats Directive and relevant parts of the Birds Directive[5] (see below)) in respect of the Development Consent Order ("DCO") and Deemed Marne Licences ("dMLs") for Thanet Extension Offshore Wind Farm and its associated infrastructure (the "Project"). For the purposes of these Regulations the Secretary of State is the competent authority.

1.2 The report also contains analysis and assessment of the potential impacts of the Project upon designated Natura 2000 sites outside of the UK in European Economic Area States ("transboundary sites"). This is included under the transboundary assessment section of the report (section six).

1.3 The Applicant is Vattenfall Wind Power Ltd. The Project is described in more detail in section two but in summary will comprise:

- an offshore wind generating station of up to 340 megawatts ("MW") installed capacity formed as an extension to the existing Thanet Offshore Wind Farm in waters surrounding it;
- a new cable connection to the shore in Pegwell Bay;
- a new onshore cable connection;
- a new substation at Richborough Port; and
- a new connection to the electricity transmission system at Richborough Energy Park near Sandwich, Kent.

1.4 The Project constitutes a nationally significant infrastructure project ("NSIP") as defined by section14(1)(a) and section 15 of the Planning Act 2008 as it is for an offshore generating station of over 100MW.

1.5 The Project was accepted for examination by the Planning Inspectorate ("PINS") on the 23 July 2018 and a three-member Panel of Inspectors ("the Panel") was appointed as the Examining Authority ("ExA") for the application. The examination of the Project application began on 11 December 2018 and completed on 11 June 2019. The Panel submitted its report of the examination, including its recommendation ("the ExA's Report"), to the Secretary of State on 11 September 2019.

Habitats Regulations Assessment

1.6 Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and Council Directive 2009/147/EC on the conservation of wild birds ("The Birds Directive") aim to ensure the long-term conservation of certain species and habitats by protecting them from possible adverse effects of plans and projects.

1.7 The Habitats Directive provides for the designation of sites for the protection of habitats and species of Natura 2000 importance. These sites are called Special Areas of Conservation ("SACs"). The Birds Directive provides for the classification of sites for the protection of rare and vulnerable birds and for regularly occurring migratory species within the EU and United Kingdom. These sites are

[3] The Conservation of Habitats and Species Regulations 2017. SI 2017/1012.
[4] The Conservation of Offshore Marine Habitats and Species Regulations 2017.
[5] Council Directive 2009/147/EC of 3 November 2009 on the conservation of wild birds.

called Special Protection Areas ("SPAs"). SACs and SPAs are collectively termed Natura 200 sites and form part of a network of protected sites across Europe and the United Kingdom.

1.8 The Convention on Wetlands of International Importance 1972 ("the Ramsar Convention") provides for the listing of wetlands of international importance. These sites are called Ramsar sites. Government policy is to afford Ramsar sites in the United Kingdom the same protection as European Natura 2000 sites.

1.9 In the UK, the Habitats Regulations and the Wildlife and Countryside Act 1981 transpose the Habitats and Birds Directives into national law as far as the 12 nautical mile ("nm") limit of territorial waters. Beyond territorial waters, the Conservation of Offshore Marine Habitats Species Regulations 2017 serve the same function for the UK's offshore marine area.

1.10 Regulation 63 of the Habitats Regulations provides that "….*before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, [the competent authority] must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives*". It also provides that " *In the light of the conclusions of the assessment, and subject to regulation 64 [IROPI], the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be)."*

1.11 Regulation 28 of the Conservation of Offshore Marine Habitats and Species Regulations 2017 contains similar provisions "*Before deciding to undertake, or give any consent, permission or other authorisation for, a relevant plan or project, a competent authority must make an appropriate assessment of the implications of the plan or project for the site in view of that site's conservation objectives".* And that "*In the light of the conclusions of the assessment, and subject to regulation 29 [IROPI], the competent authority may agree to the plan or project only if it has ascertained that it will not adversely affect the integrity of the European offshore marine site or European site (as the case may be)."*

1.12 This application is not directly connected with, or necessary to, the management of a Natura 2000 site. The Habitats Regulations require the Secretary of State to consider whether the project is likely to have a significant effect ("LSE") on any such site, alone or in-combination with other plans and projects. Where the potential for LSE cannot be excluded, an appropriate assessment ("AA") of the implications of the project for that site in view of its conservation objectives must be completed. In light of that, the Secretary of State must determine whether or not the project will have an adverse effect on the integrity ("AEoI") of the site(s). In this document, the first stage assessment as to whether there is a LSE at a site and, where required, the second stage assessment ("the AA") to determine whether there is AEoI of the site, are collectively referred to as the Habitats Regulations Assessment ("HRA"). The HRA refers only to sites within UK jurisdiction.

1.13 The Secretary of State's conclusions on habitats and wild bird issues contained in this report have been informed by evidence from the application and examination which are available on the Planning Inspectorate's National Infrastructure Planning web pages[6]. Key information from these documents is summarised and referenced in this report[7]. In particular the:

[6] https://infrastructure.planninginspectorate.gov.uk/projects/south-east/thanet-extension-offshore-wind-farm/

[7] Individual document references to the Examination Library in this Report are enclosed in square brackets '[…]'. For this reason, this Report does not contain extensive summaries of all documents and representations, although the Secretary of State has given full regard to them and has considered all important and relevant matters arising from them. A full index to the Examination Library can be found at Appendix B of the ExA Report.

- Panel's Report ("ExA")
- Report to Inform Appropriate Assessment ("RIAA") [REP2-018, REP2-019]
- Report to Inform Appropriate Assessment Addendum ("RIAA Addendum") [REP4B-015]
- Applicants HRA Matrices ("HRA Matrices") [REP2-004]
- Report on the Implications for European Sites ("RIES") [PD-018] and written responses to it
- Applicant's Environmental Statement ("Environmental Statement")
- Applicant's Statement of Common Ground ("SoCG") with Natural England ("NE") ("NE SoCG") [REP6-008]

1.14 Outside of these core documents, all other documents referred to in this report are referenced by their ExA code such as REP-xxx or APP-xxx (a link to the document that corresponds to each code can be found in the PINS Examination Library published alongside the ExA Report).

Report on Implications for European Sites ("RIES") and Statutory Consultation

1.15 Under the Habitats Regulations and the Offshore Habitats Regulations the competent authority must, for the purposes of an AA, consult the appropriate nature conservation body and have regard to any representation made by that body within such reasonable time as the authority specifies.

1.16 Natural England ("NE") is the Statutory Nature Conservation Body ("SNCB") for England and for English waters within the 12 nm limit. Joint Nature Conservation Committee ("JNCC") is the SNCB beyond 12 nm, but this duty has been discharged to NE following the 2013 Triennial Review of both organisations (Defra, 2013). However, JNCC retains responsibility as the statutory advisor for Natura 2000 Protected sites that are located outside the territorial sea and UK internal waters (i.e. more than 12nm offshore) and as such continues to provide advice to NE on the significance of any potential effects on interest features of such sites.

1.17 The ExA prepared a RIES with support from the Planning Inspectorate's Environmental Services Team. The RIES was based on matrices provided by the Applicant and relevant information provided by Interested Parties ("IPs"). The RIES documented the information received during the examination (up until 3 May 2019) and presented the ExA's understanding of the main facts regarding the HRA to be carried out by the Secretary of State.

1.18 The RIES was published on PINS National Infrastructure planning portal website and the ExA notified IPs that it had been published. Consultation on the RIES was undertaken between 14 May and 28 May 2019. The RIES was issued to ensure that IPs, including NE, were consulted formally on habitat regulations matters, as required under regulation 61(3) of the Habitats Regulations and regulation 25(3) of the Offshore Habitats Regulations. Comments on the RIES were received from the Applicant and the RIES was not updated following consultation.

1.19 The Secretary of State is content to accept the ExA's recommendation that the RIES, and consultation on it, represents an appropriate body of information to enable the Secretary of State to fulfil her duties in respect of Natura 2000 sites.

2. Project Description

Project Infrastructure

2.1 The Project comprises:

- a maximum of 34 wind turbine generators ("WTGs"), each with a rated capacity of between 8 and 12 MW, providing a total maximum generating capacity of 340 MW;
- a maximum of one offshore substation;
- up to one meteorological mast, one Light Detection and Ranging ("LIDAR") device and one wave buoy; and
- subsea inter-array cables linking the individual WTGs

2.2 The Project also includes associated development which comprises:

- up to four subsea export cables linking the offshore array to the shore;
- scour protection around foundations and cables, if required;
- an offshore export cable landfall located in Pegwell Bay;
- up to four Transition Joint Bays ("TJBs") connecting the offshore cables to the onshore cables;
- up to four onshore export cable circuits covering a length of approximately 2.6 km;
- one onshore High Voltage Alternating Current ("HVAC") substation at Richborough Port Container and Vehicle Park; and
- up to two interconnecting underground cable circuits connecting the onshore substation to the National Grid Electricity Transmission's ("NGET") existing 400kV substation at Richborough Energy Park.

2.3 The Project also includes ancillary works within the order limits which comprises:

- temporary landing places, moorings or other means of accommodating vessels in the construction and maintenance of the authorised development;
- marking buoys, beacons, fenders and other navigational warning or ship impact protection works;
- temporary works for the benefit or protection of land or structures affected by the authorised development; and
- such other works as may be necessary or expedient for the purpose of or in connection with the construction or use of the authorised development and which are within the scope of the environmental impact assessment recorded in the environmental statement.

2.4 Full details of the infrastructure to be used in the Development are detailed in Schedule 1 of the Development Consent Order ("DCO").

2.5 A 'design envelope' approach has been adopted, to allow sufficient flexibility in the Project description to accommodate refinement of the detailed design in the post-consent phase. This 'Rochdale Envelope' approach allows the Applicant to set out the broad range of options under consideration and then carry out an assessment based on the realistic worst-case scenario for each of those options. These options are used to assess the significance of the Project's environmental effects. This allows the Applicant to apply for a DCO that allows some flexibility in the final design of the Project whilst providing certainty that no greater environmental effects than those described in the realistic worst-case scenario can occur, providing the final project design lies within the options assessed. Following the 'Rochdale Envelope' approach described in the Planning Inspectorate's Advice Note 9[8], the Applicant's Environmental Statement ("ES") has identified a series of maximum design parameters in order to assess a realistic worst-case scenario of effects arising from the Project.

[8] https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/05/Advice-note-9.-Rochdale-envelope-web.pdf

2.6 The Secretary of State recognises that powers are in place for decommissioning effects to be addressed fully by the relevant authorities prior to decommissioning, and in light of more detailed information on decommissioning processes and environmental conditions at that time. The Secretary of State therefore considers that it is reasonable not to include a detailed discussion on decommissioning effects in this report and notes that decommissioning is not a barrier to the application being granted.

Project Location

2.7 The Project is located in the southern North Sea off the north-east coast of Kent. The offshore array area would be approximately 8 km from the shore at the nearest point and would encircle the outer boundary of the existing operational Thanet Offshore Wind Farm ("TOWF") (see Figure 1). The onshore site encompasses land within the administrative boundaries of both Thanet District Council and Dover District Council.

2.8 The array area would occupy a total site area of 70 km^2. Water depths within the proposed array area range typically between 11.5 and 45 metres relative to the lowest astronomical tide ("LAT"), with depths generally increasing in a north-easterly direction.

2.9 The export cable route would run in a south-westerly direction approximately 20 km to the landfall point at Pegwell Bay. A Cable Exclusion Area ("CEA") (hatched black in Figure 1) is identified for part of the export cable corridor within which no infrastructure would be installed but where construction and maintenance anchoring would be permitted. The Applicant's rationale for the CEA relates to reducing potential interactions with Ramsgate Harbour approaches and with designated conservation sites.

2.10 The onshore application site is shown in Figure 2 and includes the export cable landfall area in Pegwell Bay Country Park. From there, the site comprises land for the onshore cable alignment moving in a southerly direction through Stonelees Nature Reserve to a location opposite Ebbsfleet cottages, the only nearby residential properties. At this point the cable alignment makes a ninety degree turn to run along the perimeter of and reduce impact on land occupied by the Baypoint Club (a sports club), before making a further ninety degree turn to track to the west of the River Stour, running along the perimeter of and reducing impact on the business premises of British Car Auctions. The cable alignment then reaches the proposed onshore substation site at Richborough Port Container and Vehicle Park. There, land currently leased to UK Border Force as a secure compound is proposed to form the substation site, but additional land within the Richborough Port Container and Vehicle Park is also proposed to be taken to enable the construction of and transfer to UK Border Force of a replacement secure compound. From the port land, the cable alignment and application site cross the A256 road, allowing for the onward passage of the cable to Richborough Energy Park where it would connect to the National Grid transmission system at an existing substation. Richborough Energy Park is in use and proposed for further energy-related development including generation, distribution, transmission and interconnection undertakings and the cable alignment includes optionality to accommodate this use and development.

Designated Sites

2.11 The application site includes land within, and close to, a number of internationally, nationally and locally designated sites of biodiversity value. The application site (specifically, the proposed cable route) crosses part of the Thanet Coast SAC, the Thanet Coast and Sandwich Bay SPA and the Thanet Coast and Sandwich Bay Ramsar site. There is also a spatial overlap between the proposed array area boundary and the Southern North Sea SAC.

2.12 The Applicant identified the potential for the Project to affect a number of Natura 2000 sites located in other countries, known as transboundary sites. The potential impacts upon these sites are considered in more detail within the transboundary section of the report (section 6).

Figure 1: Location of Thanet Extension Offshore Boundary

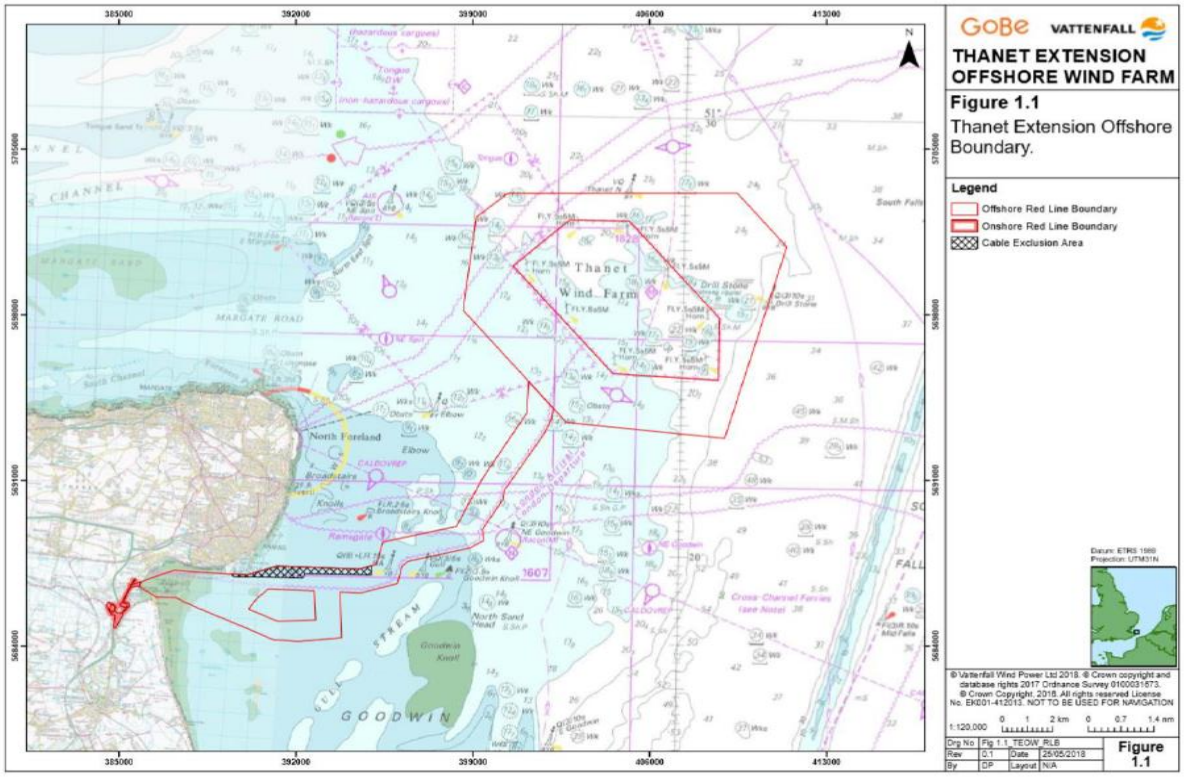
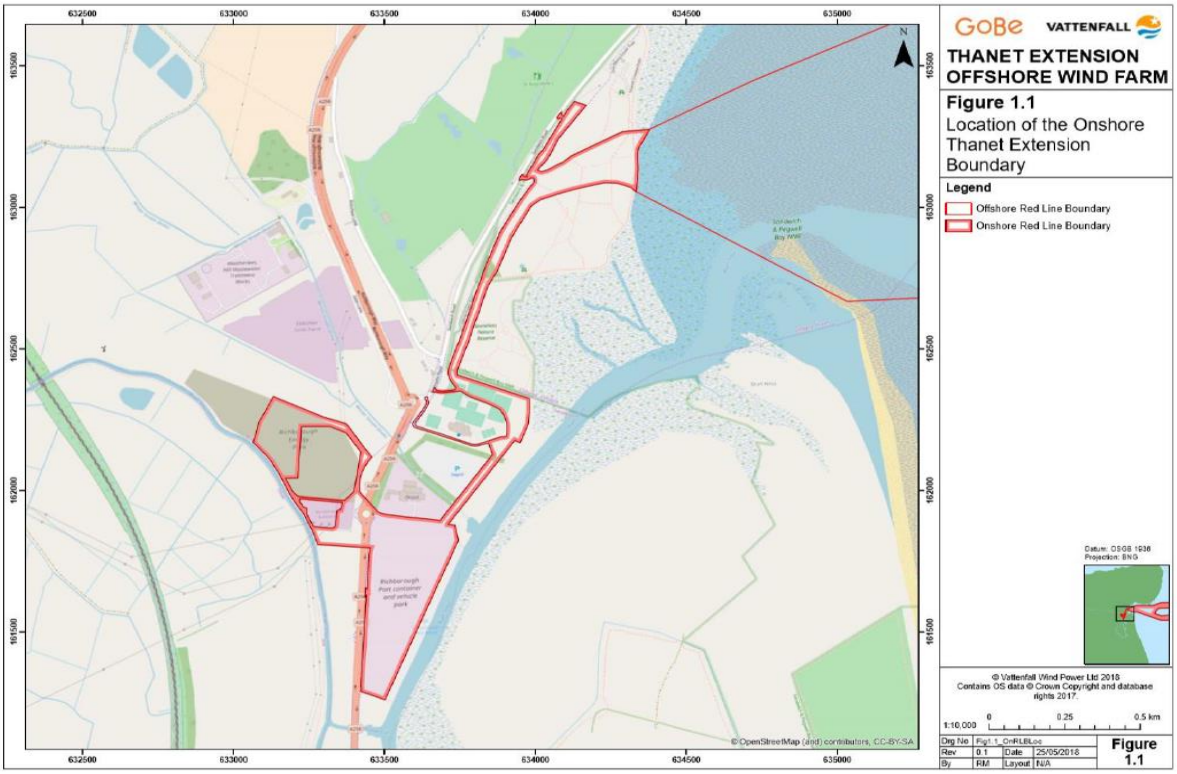


Figure 2: Location of Thanet Extension Onshore Boundary



3. Likely Significant Effects Test

3.1 Under regulation 63 of the Habitats Regulations, and regulation 28 of the Offshore Habitats Regulations, the Secretary of State must consider whether a development will have an LSE on a European site, either alone or in combination with other plans or projects. Where significant effects are likely and are not directly connected with or necessary to the management of that site, an AA is required of the implications of the plan or project for that site in view of its conservation objectives

3.2 The purpose of this section of the HRA is to identify any LSEs on Natura 2000 sites that may result from the project and to record the Secretary of State's conclusions on the need for an AA.

3.3 The ExA states that the Applicant's initial screening 'appeared to be contradictory to the outcomes of the European Court of Justice ruling in '*People Over Wind and Peter Sweetman v Coillte Teoranta*'' (referred to as 'Sweetman II' by the Applicant) due to the apparent reliance on embedded mitigation in relation to pollution prevention measures for subtidal and benthic habitat, intertidal habitats, marine mammals and onshore biodiversity to rule out LSE on European sites and their qualifying features screened into the assessment [ExA: 7.6.8].

3.4 In response, the Applicant prepared a revised Report to Inform Appropriate Assessment ("RIAA") concluding that LSE from accidental pollution at all stages of the Proposed Development would not arise due to the control measures and mitigation in place, but that "to ensure full compliance with Sweetman II these measures have not been taken into consideration during screening on a precautionary basis" [ExA: 7.6.9].

3.5 The Applicant's SoCG with NE confirms agreement between the Applicant and NE that the correct qualifying features have been identified and no other European Sites are relevant. NE agreed that the RIAA has identified all relevant features of the European sites that may be affected by the Proposed Development and that "The screening of potential likely significant effects, sites and species in relation to Thanet Extension is adequate and appropriate"[NE SoCG] . This is also reflected in [REP6-095: 9.4.1].

3.6 The ExA confirmed in its report that that no interested parties raised concerns that the Project had potential for LSE on sites beyond those listed in Annex 1 of the RIES [ExA: 7.6.27] and confirmed that it is satisfied that all relevant potential impacts, including those associated with the changes to the application, have been assessed by the Applicant in the RIAA and RIAA Addendum [ExA: 7.4.20]. The ExA stated that it is satisfied that the Applicant has correctly identified all of the relevant Natura 2000 sites and the relevant qualifying features for consideration within the HRA [ExA: 7.3.11]. Consequently, the Secretary of State is satisfied that all the relevant Natura 2000 sites and relevant qualifying features have been identified for consideration.

3.7 For each designated site, Table 1 summarises the features for which LSEs from the Project alone cannot be excluded. Table 2 summarises the features for which LSEs from the Project in combination with other plans and projects, cannot be excluded. The ExA report and the REIS provide further information on sites and features which were considered but for which there is not likely to be a significant effect. The Secretary of State is satisfied to adopt the rationale and conclusions of the Applicant for those sites and features screened out of the LSE assessment and has not duplicated this assessment here.

Likely Significant Effects: Alone assessment

3.8 Table 1 identifies those sites and features for which LSE cannot be excluded for the Project alone.

Table 1: Natura 2000 sites and features for which LSEs cannot be excluded from the effects of the Project alone (summarised from the RIES and the ExA's Report).
C = construction; O&M = operations and maintenance; D = decommissioning

Natura 2000 Site	Qualifying feature/s	Impact/s
Alde-Ore Estuary SPA	Lesser black-backed gull (breeding)	Collision mortality (O&M) Barrier effects (O&M)
Alde-Ore Estuary Ramsar site.	Criterion 6: Lesser black-backed gull (breeding) Breeding wetland bird assemblage (lesser black-backed gull only)	Collision mortality (O&M) Barrier effects (O&M)
Farne Islands SPA	Guillemot (breeding) Breeding seabird assemblage (guillemot only)	Disturbance and displacement (C, O&M, D)
Flamborough and Filey Coast SPA	Gannet (breeding) Kittiwake (breeding)	Collision mortality (O&M) Barrier effects (O&M)
	Guillemot (breeding) Razorbill (breeding)	Disturbance and displacement (C, O&M, D)
	Breeding seabird assemblage	As above for species concerned.
Foulness (Mid-Essex Coast Phase 5) SPA	Sandwich tern (breeding)	Collision mortality (O&M) Barrier effects (O&M)
Margate and Long Sands SAC	Sand banks which are slightly covered by sea water all the time	Increased suspended sediment, deposition and smothering (C, O& M, D); Changes to physical processes (O&M); Accidental pollution (C, O&M, D).
Northumberland Marine SPA	Guillemot (breeding) Breeding seabird assemblage (guillemot only)	Disturbance and displacement (C, O&M, D)
Outer Thames Estuary SPA	Red throated diver (non-breeding)	Disturbance and displacement (C, O&M, D)
	Little Tern (breeding) Common Tern (breeding)	Collision mortality (O&M) Barrier effects (O&M)
Southern North Sea SAC	Harbour porpoise	Increase in underwater noise (C, D); Accidental pollution events (C, O&M, D).
St Abb's Head to Fast Castle SPA	Kittiwake (breeding)	Collision mortality (O&M) Barrier effects (O&M)
	Guillemot (breeding) Razorbill (breeding)	Disturbance and displacement (C, O&M, D)
	Breeding seabird assemblage	As above for species concerned.

Thanet Coast SAC	Chalk reefs	Habitat loss and habitat disturbance (C, O&M, D); Increased suspended sediment and deposition (C, O&M, D); Changes to physical processes (O&M) Accidental pollution (C, O&M, D).
	Submerged or partially submerged sea caves	Accidental pollution (C, O&M, D).
Thanet Coast and Sandwich Bay SPA	Ruddy turnstone (non-breeding); European golden plover (non-breeding).	Temporary habitat loss or disturbance (C, O&M, D); Increased suspended sediment, deposition and smothering (C, O&M, D); Noise and visual disturbance (C, O&M, D); Displacement of recreational users (C, D); Accidental pollution (C, O&M, D); Potential for the spread of INNS (C, D)
Thanet Coast and Sandwich Bay Ramsar site	Criterion 2: Wetland invertebrate assemblage; Criterion 6: Ruddy turnstone (non-breeding)	Temporary habitat loss or disturbance (C, O&M, D); Possible temporary loss of habitats supporting wetland invertebrate assemblage species (C, O&M, D); Increased suspended sediment, deposition and smothering (C, O&M, D); Noise and visual disturbance (C, O&M, D); Displacement of recreational users (C, D); Accidental pollution (C, O&M, D); Potential for the spread of INNS (C, D)

3.9 The Secretary of State agrees with the findings of the Applicant, the advice of NE and the recommendations of the ExA and concludes that LSEs upon the sites and features listed in Table 1 cannot be excluded, when the Project is considered alone. These sites are taken forward to the AA to consider whether the Project will result in an adverse effect upon the integrity of these sites.

Likely Significant Effects: In-combination assessment

3.10 Table 2 identifies those sites for which LSE cannot be excluded in-combination with other plans and projects.

Table 2: Natura 2000 sites and features for which LSEs cannot be excluded from the effects of the Project in-combination (summarised from information in the RIES, RIAA and the ExA's Report). C = construction; O&M = operations and maintenance; D = decommissioning

Natura 2000 Site	Qualifying feature/s	Impact/s
Alde-Ore Estuary SPA	Lesser black-backed gull (breeding)	Collision mortality (O&M)
Alde-Ore Estuary Ramsar site.	Criterion 6: Lesser black-backed gull (breeding) Breeding wetland bird assemblage (lesser black-backed gull only)	Collision mortality (O&M)
Farne Islands SPA	Guillemot (breeding) Breeding seabird assemblage (guillemot only)	Disturbance and displacement (C, O&M, D)

Flamborough and Filey Coast SPA	Gannet (breeding) Kittiwake (breeding)	Collision mortality (O&M) Barrier effects (O&M)
	Guillemot (breeding) Razorbill (breeding)	Disturbance and displacement (C, O&M, D)
	Breeding seabird assemblage	As above for species concerned.
Northumberland Marine SPA	Guillemot (breeding) Breeding seabird assemblage (guillemot only)	Disturbance and displacement (C, O&M, D)
Outer Thames Estuary SPA	Red throated diver (non-breeding)	Disturbance and displacement (C, O&M, D)
	Little Tern (breeding) Common Tern (breeding)	Barrier effects (O&M) Collision risk (O&M)
Southern North Sea SAC	Harbour porpoise	Increase in underwater noise (C, D); Accidental pollution events (C, O&M, D).
St Abb's Head to Fast Castle SPA	Kittiwake (breeding)	Collision mortality (O&M)
	Guillemot (breeding) Razorbill (breeding)	Disturbance and displacement (C, O&M, D)
	Breeding seabird assemblage	As above for species concerned.
Thanet Coast and Sandwich Bay SPA	Ruddy turnstone (non-breeding); European golden plover (non-breeding).	Temporary habitat loss or disturbance (C, O&M, D); Noise and visual disturbance (C, O&M, D); Displacement of recreational users (C, D); Accidental pollution (C, O&M, D); Potential for the spread of INNS (C, D)
Thanet Coast and Sandwich Bay Ramsar site	Criterion 2: Wetland invertebrate assemblage; Criterion 6: Ruddy turnstone (non-breeding)11	Temporary habitat loss or disturbance (C, O&M, D); Noise and visual disturbance (C, O&M, D); Possible displacement of recreational users (C, D); Accidental pollution (C, O&M, D); Potential for the spread of INNS (C, D)

3.11 The Secretary of State agrees with the findings of the Applicant, the advice of NE and the recommendations of the ExA and concludes that likely significant effects upon the sites and features listed in Table 2 cannot be excluded when the Project is considered in combination with other plans and projects. These sites are taken forward to the AA to consider whether the Project will result in an adverse effect upon the integrity of these sites.

Likely Significant Effects: Conclusions

3.12 The Secretary of State has considered the potential effects of the Project on all relevant sites and features to determine whether there is potential for LSE from the Project either alone or in combination with other relevant plans and projects. The Secretary of State considers that sufficient information has been provided to inform a robust assessment in line with his duties under the Habitats Regulations.

3.13 The Secretary of State notes the agreement between the Applicant and NE in their SoCG that all correct qualifying features have been identified and that no other Natura 2000 Sites are relevant. He notes the ExA's recommendation that all relevant potential impacts have been assessed by the Applicant and that the Applicant has correctly identified all of the relevant Natura 2000 sites and the relevant qualifying features [ExA: 7.3.11]. The Secretary of State is therefore satisfied that all the relevant Natura 2000 sites and relevant qualifying features have been considered.

3.14 The Secretary of State is satisfied to rely on the advice of NE, the recommendations of the ExA, the RIES, and written responses to it to inform her view. He considers that the evidence behind these judgements has been fully tested as part of the examination process.

3.15 Having given due consideration to the information and analysis presented to him, the Secretary of State is in agreement with the ExA and concludes that LSEs cannot be excluded for the features of the 13 sites identified in Table 1 (when the Project is considered alone) and Table 2 (when the Project is considered in combination with other relevant plans and projects). These 13 sites are:

- Alde-Ore Estuary SPA;
- Alde-Ore Estuary Ramsar site;
- Farne Islands SPA;
- Flamborough and Filey Coast SPA;
- Foulness (Mid-Essex Coast Phase 5) SPA;
- Margate and Long Sands SAC;
- Northumberland Marine SPA;
- Outer Thames Estuary SPA;
- Southern North Sea SAC;
- St Abb's Head to Fast Castle SPA;
- Thanet Coast SAC;
- Thanet Coast and Sandwich Bay SPA; and
- Thanet Coast and Sandwich Bay Ramsar site.

3.16 These 13 sites are now taken forward to the AA stage to consider whether the effects of the Project, either alone or in-combination, would result in an adverse effect upon the integrity of these sites.

4. Appropriate Assessment

Methodology

4.1 The requirement to undertake an AA is triggered when a competent authority, in this case the Secretary of State, determines that a plan or project is likely to have a significant effect on a Natura 2000 site either alone or in-combination with other plans or projects. Guidance issued by the European Commission states that the purpose of an AA is to assess the implications of the plan or project in respect of the site's conservation objectives, either individually or in combination with other plans and projects, and that the conclusions should enable the competent authority to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The

focus is therefore specifically on the species and/or habitats for which the Natura 2000 site is designated.[9]

4.2 The purpose of this AA is to assess the implications of the Project in respect of the conservation objectives of the thirteen Natura 2000 sites where LSEs have been identified to ascertain whether the Project will adversely affect the integrity of those sites. It aims to use the best scientific evidence available to identify all aspects of the Project which can, either individually or in combination with other plans or projects, affect those conservation objectives.

4.3 If the competent authority cannot ascertain the absence of an AEoI without reasonable scientific doubt, then under the Habitats Regulations, alternative solutions should be sought. In the absence of an acceptable alternative, the project can proceed only if there are imperative reasons of overriding public interest ("IROPI") and suitable compensation measures are secured.

Conservation Objectives

4.4 Guidance from the European Commission indicates that disturbance to a species or deterioration of a Natura 2000 site must be considered in relation to the integrity of that site and its conservation objectives[10]. Section 4.6.4 of the guidance defines site integrity as "*…the coherence of the site's ecological structure, function and ecological processes,, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated."*

4.5 Conservation objectives outline the desired state for a Natura 2000 site, in terms of the interest features for which it has been designated. If these interest features are being managed in a way which maintains their nature conservation value, they are assessed as being in a 'favourable condition'. An adverse effect on integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation.

4.6 There are no set thresholds at which impacts on site integrity are considered to be adverse. This is a matter for interpretation on a site-by-site basis, depending on the designated feature and nature, scale and significance of the impact. Conservation objectives have been used by the Secretary of State to consider whether the Project has the potential for having an adverse effect on integrity, either alone or in-combination.

4.7 The potential for the Project to have an adverse effect on site integrity is considered for each site in turn in the proceeding sections. Tables 1 and 2 list the thirteen sites and associated features for which the Secretary of State considers there to be LSE, requiring an AA to be undertaken to determine whether there is potential for AEoI at the site. The Applicant concluded in the RIAA that the Project would not have any AEoI of the thirteen sites identified at the LSE stage, either alone or in-combination with other plans and projects. These conclusions are reiterated in the RIAA Addendum.

[9] "Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", European Commission (2018), paragraph 4.6.1

[10] Ibid., paragraph 4.6.3

Appropriate Assessment: Alde-Ore Estuary SPA; Alde-Ore Estuary Ramsar; Farne Islands SPA; Foulness (Mid-Essex Coast Phase 5) SPA; Margate and Long Sands SAC; Northumberland Marine SPA; and St Abb's Head to Fast Castle SPA.

4.8 The RIES [RIES: Table 4.1] summarises the level of agreement of IPs with the Applicant's conclusions for each site. The Applicant's conclusions of no AEoI were undisputed by IPs for seven of the thirteen sites for which LSE was identified:

- Alde-Ore Estuary SPA
- Alde-Ore Estuary Ramsar
- Farne Islands SPA
- Foulness (Mid-Essex Coast Phase 5) SPA
- Margate and Long Sands SAC
- Northumberland Marine SPA
- St Abb's Head to Fast Castle SPA

4.9 Table 3 sets out the reasons that the Applicant, with agreement from SNCBs, consider that there would not be an AEoI at these sites. The Applicant's SoCG with NE states agreement with the Applicants conclusions of no AEoI in respect of all of the above sites with the exception of St Abbs Head to Fast Castle SPA, given that it is in Scotland with Scottish Natural Heritage (SNH) as the relevant SNCB. The ExA states in its report that "there is an absence of any response from SNH disputing the Applicant's no AEoI conclusions for the St Abb's Head to Fast Castle SPA, and no other IPs raised any concerns in respect of this site during the Examination. NE are satisfied with the Applicant's evidence that there is no AEoI for Natura 2000 sites that are closer to the Proposed Development site and share similar qualifying features (for example the Farne Islands SPA and Northumberland Marine SPA). On this basis, the ExA is satisfied with the Applicant's conclusion of no AEoI at the St Abbs Head to Fast Castle SPA [ExA: 7.8.6].

4.10 The ExA recommends that it is content that the information provided by the Applicant "sufficiently demonstrates no AEoI can be concluded in relation to all qualifying features screened into the assessment by the Applicant for the European sites listed" [ExA: 7.8.7]. The ExA notes the Applicant's conclusion of no AEoI on the following sites has not been disputed and considers that it would be reasonable for the Secretary of State to reach the same conclusion in relation to the impacts of the Proposed Development both alone and in-combination" [ExA: 7.10.1].

4.11 For the reasons set out in Table 3 and because of the agreement between the Applicant and SNCBs, with no objections from any other interested parties, the Secretary of State considers there to be no AEoI of the following seven sites, either from the effects of the Project alone or in combination with other plans and projects:

- Alde-Ore Estuary SPA
- Alde-Ore Estuary Ramsar
- Farne Islands SPA
- Foulness (Mid-Essex Coast Phase 5) SPA
- Margate and Long Sands SAC
- Northumberland Marine SPA
- St Abb's Head to Fast Castle SPA

Table 3: Natura 2000 sites for which the Applicant and IPs agree there is no AEoI from the Project either alone or in combination with other plans or projects

Name of Natura 2000 Site[11]	Feature	Potential Impact/s	Reason for no potential adverse effect on integrity alone or in combination	SNCB agreement
Alde-Ore Estuary SPA	Lesser black-backed gull (breeding)	Collision mortality (O&M) (alone and in combination	The Applicant concluded no AEoI from the risk of collision based on a prediction of collision resultant mortality to less than two birds per annum that makes no material difference to the long-term maintenance of the lesser black-backed gull population of the Alde-Ore Estuary SPA, and makes no material contribution to an in-combination collision risk assessment of the lesser black-backed gull population of the Alde-Ore Estuary SPA [HRA Matrices: Matrix 34].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within the SoCG and the RIES [RIES: Table 4.1]
		Barrier Effect (O&M) (alone)	The Applicant concluded no AEoI from barrier effects based the minimal effect of deviating around the site on migration that makes no material difference to the long-term maintenance of the lesser black-backed gull population of the Alde-Ore Estuary SPA [HRA Matrices: Matrix 34].	
Alde-Ore Estuary Ramsar	Criterion 6: Lesser black-backed gull (breeding) Breeding wetland bird assemblage (lesser black-backed gull only)	Collision mortality (O&M) (alone and in combination)	The Applicant concluded no AEoI from the risk of collision based on a prediction of collision resultant mortality to less than two lesser black-backed gull per annum (considered as an individual feature and as the relevant component of the breeding bird assemblage) that makes no material difference to the long-term maintenance of the lesser black-backed gull population of the Alde-Ore Estuary Ramsar site [HRA Matrices: Matrix 35].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within the SoCG and the RIES [RIES: Table 4.1].
		Barrier Effect (O&M) (alone)	The Applicant concluded no AEoI from barrier effects based on based on the minimal effect of deviating around the site on migration that makes no material difference to the long-term maintenance of the lesser black-backed gull population of the Alde-Ore Estuary Ramsar site [HRA Matrices: Matrix 35].	

[11] Conservation Objectives for each site can be found in the RIAA

Farne Islands SPA	Guillemot (breeding) Breeding seabird assemblage (guillemot only)	Disturbance and displacement (C, O&M, D) (alone and in combination)	The Applicant concluded no AEoI as a result of disturbance and consequent displacement by the project alone, based on a prediction of displacement resultant mortality to a small number of guillemot (both as an interest feature and as the relevant component of the breeding assemblage) that makes no material difference to the long-term maintenance of the guillemot population as part of the of the Farne Islands SPA [HRA Matrices: Matrix 38]. The Applicant concluded no AEoI as a result of disturbance and consequent displacement by the project in-combination based on cable laying for Nemo Link not occurring in the same year as Thanet Extension construction and that any successive cable laying is each of short duration and takes place in waters that do not support significant populations of guillemot and for these reasons makes no difference to the long-term maintenance of the guillemot population (as an interest feature and components of the breeding assemblage) [REP2-004: Matrix 38]. The Applicant also concluded no AEoI based on Thanet Extension making no material contribution to the in-combination total predicted to be displaced and suffer resultant mortality and for this reason it makes no difference to the long-term maintenance of the guillemot population (as an interest feature and components of the breeding assemblage) of the Farne Islands SPA [HRA Matrices: Matrix 38].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within the SoCG and stated in the RIES [RIES: Table 4.1].
Foulness (Mid-Essex Coast Phase 5) SPA	Sandwich tern (breeding)	Collision mortality (O&M) (alone)	The Applicant concluded no AEoI from the risk of collision based on a prediction of collision resultant mortality to less than a single individual that makes no material difference to the long-term maintenance of the tern species population of the Foulness (Mid-Essex Coast Phase 5) SPA [HRA Matrices: Matrix 33].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within the SoCG and stated in the RIES [RIES: Table 4.1].
		Barrier effect (O&M) alone)	The Applicant concluded no AEoI from barrier effects based on the extremely low number of the tern interest features using the site and the minimal effect of deviating around the site on migration that makes no material difference to the long-term maintenance of the tern species population of the Foulness (Mid-Essex Coast Phase 5) SPA [HRA Matrices: Matrix 33].	

Margate and Long Sands SAC	Sand banks which are slightly covered by sea water all the time	Increased suspended sediment, deposition, and smothering (C, O& M, D) (alone)	The Applicant's ES found that the magnitude of a change in total suspended sediment would be very low, with potential receptors assessed as high sensitivity, with the magnitude of impact during construction being greater than any during operation and maintenance. The conclusion was found to be negligible and not significant [APP-043: 2.10.51]. Although the impacts are predicted to be negligible, there is potential for such sediment to reach the designated subtidal sand bank feature. However, it is noted that there is at least 3 km between the SAC and the Thanet Extension array boundary, with the subtidal sandbanks therefore beyond the 560m range of the nearfield maximum level of deposition (0.05m). Any deposition within the SAC would therefore be less than that level. Literature produced specifically for the SAC found a low vulnerability to an increase in turbidity which, combined with the short term and temporary nature of any change and the existing background levels, results in a conclusion of no AEoI [HRA Matrices: Matrix 25].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within NE's written representations [REP1-113: 6.4.51] and stated in the RIES [RIES: Table 4.1].
		Accidental pollution (C, O&M, D) (alone)	The SAC is located within 3km of the Project at its nearest point and therefore potential for accidental pollution to reach the SAC exists. The production, agreement and implementation of relevant plans with the MMO and Natural England will address any concerns around accidental pollution during construction, operation and decommissioning. Following implementation of the relevant plans there is sufficient certainty that the risk of accidental pollution at all stages of the project is negligible and there will therefore be no adverse effect [HRA Matrices: Matrix 25].	
		Changes to physical processes (O&M) (alone)	The presence of foundations, scour protection and cable protection material may introduce changes to the local hydrodynamic and wave regime, resulting in changes to the sediment transport pathways and associated effects on benthic ecology. The ES determined that the potential for impacts on physical processes will be negligible to minor, with any such impacts being localised and of short to medium term duration. Any such localised and minor change in physical processes will have a negligible risk for intertidal and subtidal habitats, including the subtidal sandbank feature of the SAC. The Applicant concludes that there is, therefore, no AEoI [HRA Matrices: Matrix 25].	

Northumberland Marine SPA	Guillemot (breeding) Breeding seabird assemblage (guillemot only)	Disturbance and displacement (alone and in combination)	The Applicant concluded no AEoI from disturbance and consequent displacement based on a prediction of displacement resultant mortality to a small number of guillemot (as a feature and relevant component of the breeding assemblage) that makes no material difference to the long-term maintenance of the guillemot population of the Northumberland Marine SPA [HRA Matrices: Matrix 35]. The Applicant concluded no AEoI from disturbance and consequent displacement in-combination based on cable laying for Nemo Link not occurring in the same year as Thanet Extension construction and that any successive cable laying is each of short duration and takes place in waters that do not support significant populations of guillemot and for these reasons makes no difference to the long-term maintenance of the guillemot population (as an interest feature and components of the breeding assemblage). The Applicant also concluded no AEoI of the site based on Thanet Extension making no material contribution to the in-combination total predicted to be displaced and suffer resultant mortality and for this reason it makes no difference to the long-term maintenance of the guillemot population (as an interest feature and components of the breeding assemblage) of the Northumberland Marine SPA [HRA Matrices: Matrix 37].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within the SoCG and stated in the RIES [RIES: Table 4.1]
St Abb's Head to Fast Castle SPA	Kittiwake (breeding) Breeding seabird assemblage (kittiwake)	Collision mortality (O&M) (alone and in combination)	The Applicant concluded no AEoI from the risk of collision based on a prediction of collision resultant mortality to kittiwake (as interest features alone and as part of the breeding assemblage) that was attributed to this SPA of a very small number of individuals that makes no material difference to the long-term maintenance of the kittiwake population of the St Abb's Head to Fast Castle SPA [HRA Matrices: Matrix 39]. The Applicant concluded no AEoI from the risk of collision in-combination based on a prediction of collision resultant mortality to kittiwake (as an interest feature and a component of the breeding assemblage) that was attributed to this SPA of a very small number of individuals that makes no material contribution to an in-combination collision risk assessment of the kittiwake population of the St Abb's Head to Fast Castle SPA [HRA Matrices: Matrix 39].	NE's agreement with the Applicant's conclusion of no AEoI is recorded within the SoCG and stated in the RIES [RIES: Table 4.1]. However. this site is a Scottish site and so the relevant SNCB

		Barrier effects (O&M) (alone)	Barrier effects as a result of the offshore works alone was considered in the RIAA. The Applicant concluded no AEoI based on the minimal effect on kittiwake (as interest features alone and as part of the breeding assemblage) of deviating around the site on migration that makes no material difference to the long-term maintenance of the kittiwake population of the St Abb's Head to Fast Castle SPA [HRA Matrices: Matrix 39].	is Scottish Natural Heritage.
	Guillemot (breeding) Razorbill (breeding) Breeding seabird assemblage (guillemot and razorbill)	Disturbance and displacement (C, O&M, D) (alone and in combination)	Disturbance and consequent displacement from the project alone was considered in detail in the RIAA. The Applicant concluded no AEoI based on a prediction of displacement resultant mortality to a small number of guillemot and razorbill (as interest features alone and as part of the breeding assemblage) that makes no material difference to the long-term maintenance of the guillemot and razorbill populations of the St Abb's Head to Fast Castle SPA [HRA Matrices: Matrix 39]. Disturbance and consequent displacement by the project in-combination was considered in detail in the RIAA. The Applicant concluded no adverse effect on the integrity of the site based on cable laying for Nemo Link not occurring in the same year as Thanet Extension construction and that any successive cable laying is each of short duration and takes place in waters that do not support significant populations of guillemot and razorbill and for these reasons makes no difference to the long-term maintenance of the guillemot and razorbill populations (as interest features and components of the breeding assemblage) of the St Abb's Head to Fast Castle SPA . The Applicant also concluded no AEoI based on Thanet Extension making no material contribution to the in-combination total predicted to be displaced and suffer resultant mortality and for this reason it makes no difference to the long-term maintenance of the guillemot and razorbill populations (as interest features and components of the breeding assemblage) of the St Abb's Head to Fast Castle SPA [HRA Matrices: Matrix 39].	

Appropriate Assessment: Outer Thames Estuary SPA

4.12 The Outer Thames Estuary ("OTE") SPA is a 392,451.66 km^2 area of marine and coastal habitat supporting wintering red throated diver off the coast of Kent, Essex, Suffolk and Norfolk and a foraging area for little tern and common tern during the breeding season. The SPA citation has a designated red-throated diver non-breeding population of 6,466 individuals in addition to common tern (266 breeding pairs) and little tern (373 breeding pairs).

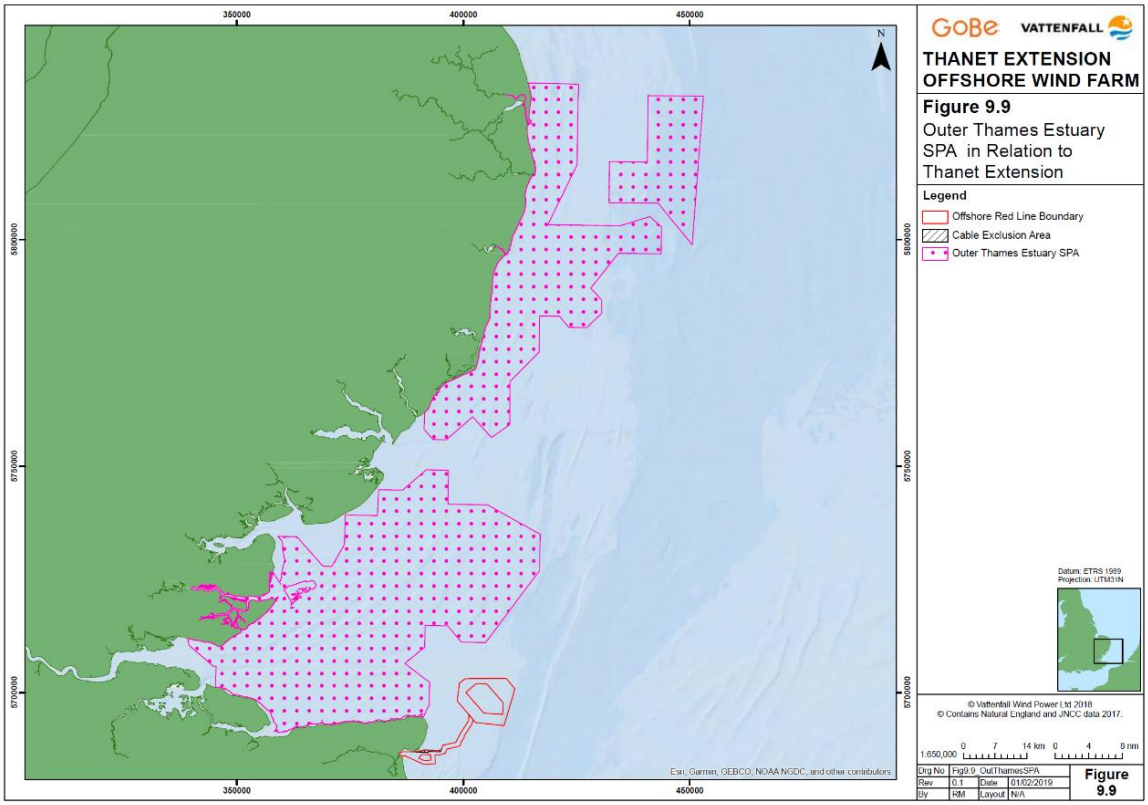
4.13 NE published conservation objectives for the SPA in 2019[12]. These are set out in Table 4, below.

Table 4: Conservation Objectives for the Outer Thames Estuary SPA

Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

4.14 The Project is approximately 7km from the OTE SPA (see Figure 3). The site amalgamates the existing Outer Thames Estuary SPA with the Outer Thames Estuary Extension.

Figure 3: Location of the Project in relation to the Outer Thames Estuary SPA



[12] http://publications.naturalengland.org.uk/file/6636505681887232

4.15 LSEs upon the interest features of the site were identified because of the potential for the Project, both alone and in-combination with other plans and projects, to lead to

- Disturbance and displacement of red-throated diver; and
- Collision risk and barrier effects upon common tern and little tern.

4.16 The potential impacts upon each of the qualifying features are set out in Table 5.

Table 5: Impact upon each feature of the Outer Thames Estuary SPA for which LSE was identified (C = construction; O = operation and maintenance; D = decommissioning)

Feature	Disturbance and displacement	Collision risk	Barrier effect	In-combination
Common tern		O	O	C, O, D
Little tern		O	O	C, O, D
Red-throated diver	C, O, D			C, O, D

4.17 The Secretary of State has considered the potential for the Project to constitute an adverse effect on site integrity for each feature for which a significant effect is likely.

Collision risk

4.18 Common tern: The Applicant's analysis concluded that, 'given the very low numbers recorded, the very low number of potential passes across the region of Thanet Extension and the low flight height, the risk of collision is extremely low' [RIAA: 11.4.124] and that 'there is, therefore, no potential for AEoI to the common tern feature of the Outer Thames Estuary SPA in relation to collision risk effects from Thanet Extension alone and therefore, subject to natural change, common tern will be maintained as a feature in the long-term' [RIAA: 11.4.125].

4.19 Little tern: The Applicant's analysis concluded that, 'given that none were recorded and the very low number of potential passes across the region of Thanet Extension, the risk of collision is extremely low' [RIAA: 11.4.128] and that 'there is, therefore, no potential for AEoI to the little tern feature of the Outer Thames Estuary SPA in relation to collision risk effects from Thanet Extension alone and therefore, subject to natural change, little tern will be maintained as a feature in the long-term' [RIAA: 11.4.129].

4.20 The Applicant concluded no AEoI of the OTE SPA from the Project alone based on a prediction of collision resultant mortality to less than a single individual which makes no material difference to the long-term maintenance of the tern species populations [RIES: Stage 2 Matrix 5].

4.21 In-combination effects for little tern and common tern were not considered by the Applicant in either its HRA matrices or the RIAA. The Applicant concluded no AEoI.

4.22 The Applicant's conclusions of no AEoI at the OTE SPA from the effects of collision risk to common tern and little tern both from the effects of the Project alone and in-combination was not disputed by IPs during the Examination [RIES: Stage 2 Matrix 5]. NE's comments on the RIES [REP6-095] state that they '…are in agreement with the ExA's narrative associated with this particular designated site.'

4.23 The ExA recommends that, having regard to the information presented in the Applicant's RIAA, it is satisfied that there would be no AEoI from the project alone or in-combination with other plans and projects on the common tern or little tern features of the Outer Thames Estuary SPA [ExA: 7.8.27].

4.24 Having given due consideration to the information and analysis presented to him, the Secretary of State is in agreement with the ExA and concludes that the effects of collision risk to little tern and common tern from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the OTE SPA.

Barrier effects

4.25 The Applicant has concluded no AEoI from barrier effects during operation of the Project either alone or in-combination with other plans and projects based on the 'extremely low number of the common and little tern interest features using the site and the minimal effect of deviating around the site on migration that makes no material difference to the long-term maintenance of the tern species population of the Outer Thames Estuary SPA [RIES: Stage 2, Matrix 5]. The Applicant states that 'the significance of the barrier effect for all species assessed was 'negligible adverse'' [APP-045: 4.1.153 – 4.1.155]. In-combination effects for little tern and common tern were not considered by the Applicant in either its HRA Matrices or RIAA. The Applicant concluded no AEoI.

4.26 The Applicant's conclusions of no AEoI of the OTE SPA from barrier effects to common tern and little tern, both from the effects of the Project alone and in combination were not disputed by IPs during the Examination. NE agreed that 'the significance of barrier effects is negligible' [REP2-045].

4.27 The ExA recommends that, having regard to the information presented in the Applicant's RIAA, it is satisfied that there would be no AEoI from the project alone or in-combination with other plans and projects on the common tern or little tern features of the OTE SPA [ExA: 7.8.27].

4.28 Having given due consideration to the information and analysis presented to him, the Secretary of State is in agreement with the ExA and concludes that barrier effects to little tern and common tern from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the OTE SPA.

Disturbance and displacement

Alone assessment: Red-throated diver

4.29 The Applicant's approach to the assessment of displacement effects on red-throated divers is set out in the RIAA [RIAA: 11.4.7 – 11.4.14]. The Applicant's assessment concluded that there would be no displacement of red-throated diver beyond the site boundary.

4.30 The Applicant's displacement methodology was challenged by NE [RR-053: 5.3.1.1] and RSPB [REP1-113: 6.4.3]. NE and the Royal Society for the Protection of Birds ("RSPB") contended that the number of red-throated divers the Applicant predicts would be displaced by the Project may be an underestimate, due to the Applicant's methodology not having followed an agreed Joint SNCB Interim Displacement Advice Note[13].

4.31 NE cited evidence demonstrating that red-throated diver displacement occurs at distances beyond 4km from offshore wind farm developments. They suggested that this would support a methodological approach that takes into account displacement beyond 4km [REP1-116]. NE considered that there was no clear justification to change its current advice of assuming 100% displacement out to 4km and advised that this scenario be presented alongside the Applicant's preferred scenario [REP1-113: 6.4.4]. The Applicant considered that the displacement buffers adopted in the application documentation are based on empirical regional and site-specific data, which it considered to be appropriate [REP2-013].

[13] Joint SNCB Interim Displacement Advice Note: Advice on how to present assessment information on the extent and potential consequences of seabird displacement from Offshore Wind Farm (OWF) developments. (http://jncc.defra.gov.uk/pdf/Joint_SNCB_Interim_Displacement_AdviceNote_2017.pdf)

4.32 Despite the methodological disagreements, the Applicant provided the additional displacement matrices. The Applicant estimated that between 0.18 birds per annum (using the Applicant's applied methodology) and 0.93 birds per annum (using the SNCB applied methodology) would be subject to mortality as a consequence of displacement from the Project [REP6-037]. The Applicant concluded that due to the low numbers of birds potentially displaced, a change in the displacement buffer would not materially change the outcome of the assessment [REP2-013] which concluded that there would be no AEoI at the OTE SPA from the effects of disturbance and displacement of red-throated diver.

4.33 To mitigate against the impact of the Project on shipping and navigation a Structures Exclusion Zone ("SEZ") was proposed. The Applicant stated that the SEZ also provides mitigation for features of the OTE SPA due to the SEZ increasing the separation distance between the boundary of the SPA and the closest wind turbine (from 6.15km to 7.65km) [REP4B-015]. The Applicant considered that the SEZ places the Project's array boundary 'at the extreme limit of the (very precautionary) Natural England 8km screening distance' and that this 8km range is in their view 'overly precautionary for Thanet Extension, with site specific data indicating displacement falling to zero within 4km and displacement less than 100% even within the existing wind farm area' [REP5-016].

4.34 The final Offshore Ornithology SoCG between the Applicant and NE [REP6-015] states that, in respect of introduction of the SEZ, 'we acknowledge that there is now some uncertainty whether there would be any displacement effects, given the distance that the project is now planned to be from the SPA. However, it cannot be concluded that there will be no displacement effect at all'. The SoCG also states that 'NE agree that there is unlikely to be an adverse effect on integrity on red throated diver population within Outer Thames Estuary SPA alone, based on the fact that the project and 4km buffer is outside of the Outer Thames Estuary SPA boundary'.

4.35 The ExA is satisfied that the Applicant's conclusions of no AEoI from disturbance and displacement of red-throated diver for the Proposed Development alone are well supported and that sufficient evidence has been provided to demonstrate that 'subject to natural change, red-throated diver will be maintained as a feature in the long-term with respect to the potential for adverse effects from disturbance and displacement' [RIAA: 11.4.49], [ExA: 7.8.53]

4.36 The Secretary of State has considered the representations made by the Applicant, NE, RSPB, and the recommendation as made by the ExA. The Secretary of State is satisfied that the potential impacts on red-throated diver as a result of disturbance and displacement from the Project alone would not represent an adverse effect upon the integrity of the OTE SPA.

In-combination Assessment: red-throated diver

4.37 NE and RSPB's comments concerning the methodology for assessing the impacts on red-throated diver extend to the assessment of in-combination effects.

4.38 Operational disturbance and consequent displacement by the Project in-combination was considered in the Applicant's RIAA [RIAA: 12.4.11 – 12.4.45]. Those OWFs screened in for consideration were identified based on geographic proximity. Those OWFs were a) those within the boundary of the Outer Thames Estuary SPA; and b) those for which the OTE SPA was the nearest SPA or pSPA with red-throated diver as an interest feature. Table 6 lists those projects considered in the in-combination assessment whose potential displacement effects were attributed to the OTE SPA. The list of projects to be considered in combination was not challenged by any IPs and the ExA states [ExA: 7.8.55] that it is satisfied with the Applicant's consideration of relevant plans and projects for inclusion following a tiered approach to the assessment.

Table 6: OWFs whose potential displacement effects are attributed to the Outer Thames Estuary SPA [RIAA, Table 12.8]

Offshore wind farm	Tier	Location relative to the SPA
Gunfleet Sands	1	Within the OTE SPA
Kentish Flats	1	Within the OTE SPA
Kentish Flats Extension	1	Within the OTE SPA
London Array	1	Within the OTE SPA
Scroby Sands	1	Within the OTE SPA (part)
Galloper	1	Outside of, but functionally linked to OTE SPA
Greater Gabbard	1	Outside of, but functionally linked to OTE SPA
Thanet	1	Outside of, but functionally linked to OTE SPA
East Anglia ONE	2	Outside of, but functionally linked to OTE SPA
East Anglia THREE	3	Outside of, but functionally linked to OTE SPA
Norfolk Vanguard East & West	4	Outside of, but functionally linked to OTE SPA
Thanet Extension	4	Outside of, but functionally linked to OTE SPA

4.39 The Applicant's assessment [RIAA: Tables 12.9 to 12.14] demonstrates its position that the great majority of the contribution to the in-combination assessment arises from OWFs that have been consented and are already operational (Tier 1) and that the contribution of the Project itself is very small and is considered not to make a material contribution to potential effects arising from the Tier 1 projects. The Applicant concluded that the Project does not make a material contribution to in-combination disturbance and displacement to the red-throated diver feature of the OTE SPA and that there is, therefore, no potential for AEoI during operation and maintenance based on a prediction of displacement resultant mortality to a small number of individuals that makes no material difference to the long-term maintenance of the red-throated diver population of the OTE SPA.

4.40 NE provided comments on the Applicant's red-throated diver in-combination assessment methodology [REP1-113] stating that: 'Although Natural England disagrees with some aspects of the methodology used to assess red throated diver displacement, we acknowledge that if the recommended methodology were used, it is likely that the overall conclusions would remain the same. This is that there is no AEoI or significant effect from the project alone, and the contribution made to the in-combination and cumulative totals is small enough not to make a material difference'. This was reiterated by NE in the SoCG between the Applicant and NE where NE states 'we acknowledge that the methodology does not change the relative contribution that Thanet Extension which is small compared to consented offshore windfarms'. NE stated at deadline 2 that 'whether or not the applicant's or our recommended methodology is used the overall conclusions are unchanged' [REP2-045].

4.41 NE acknowledged there is some uncertainty whether there is likely to be any contribution from the Proposed Development to in-combination displacement effects, now that the SEZ forms part of the application. However, NE reiterated that due to the existing displacement effects from operational offshore wind farm projects, '…it is not possible for Natural England to state that there is no adverse effect in-combination beyond reasonable scientific doubt' [REP5-064].

4.42 NE highlighted the importance of post consent ornithological monitoring, should the Proposed Development be consented, to focus on the extent of red-throated diver displacement in and around Outer Thames Estuary SPA [REP5-064]. An offshore ornithological monitoring plan (in accordance with the in-principle offshore ornithological monitoring plan) forms part of DML condition 13 (Pre-construction plans and documentation) and DCO schedule 13.

4.43 The ExA gave regard to the evidence presented in the examination and concluded that AEoI on the red-throated diver feature of the OTE SPA in-combination with other plans and projects could be excluded. The ExA's conclusion in this regard is influenced by the finding that:

- The quantum of effect from the Proposed Development is unlikely to make a material contribution to the combined displacement effects;
- A “precautionary” approach has been applied to the assessment of displacement effects out to 8km from the Proposed Development (as suggested by site-specific evidence from post construction monitoring of the existing Thanet offshore wind farm); and
- The “great majority” of the contribution arises from other projects that have been consented and are already operational (tier 1) [ExA: 7.8.58].

4.44 The ExA states that it is ’content that effect arising from the Proposed Development, whilst theoretically present, is so minimal as to be within the error margin of relevant assessment and not to be a material consideration’ [ExA: 7.8.58] and concludes ‘that the contribution from the Proposed Development whilst apparent is beneath any the threshold of significance and de minimis [ExA: 7.10.1].

4.45 The Secretary of State has considered the representations made by the Applicant, NE, RSPB and the recommendation as made by the ExA. The Secretary of State notes the methodological disputes between the Applicant and NE and the RSPB and the final position of NE that an overall AEoI from the Project in-combination cannot in its view be ruled out beyond reasonable scientific doubt. The Secretary of State however agrees with the recommendations of the ExA that the effect of the Project is *de minimis* and he is satisfied that the potential impacts on red-throated diver as a result of disturbance and displacement from the Project in-combination with other plans and projects would not represent an adverse effect upon the integrity of the OTE SPA.

4.46 To ensure post consent ornithological monitoring, an offshore ornithological monitoring plan (in accordance with the in-principle offshore ornithological monitoring plan) forms part of DML condition 13 (Pre-construction plans and documentation) and DCO schedule 13.

Conclusion on the OTE SPA

4.47 Given the low magnitude of effects, the Secretary of State agrees with the recommendations of the ExA and concludes that the Project will not have an adverse effect on the integrity of the OTE SPA either alone or in-combination with other plans and projects.

Appropriate Assessment: Flamborough and Filey Coast SPA

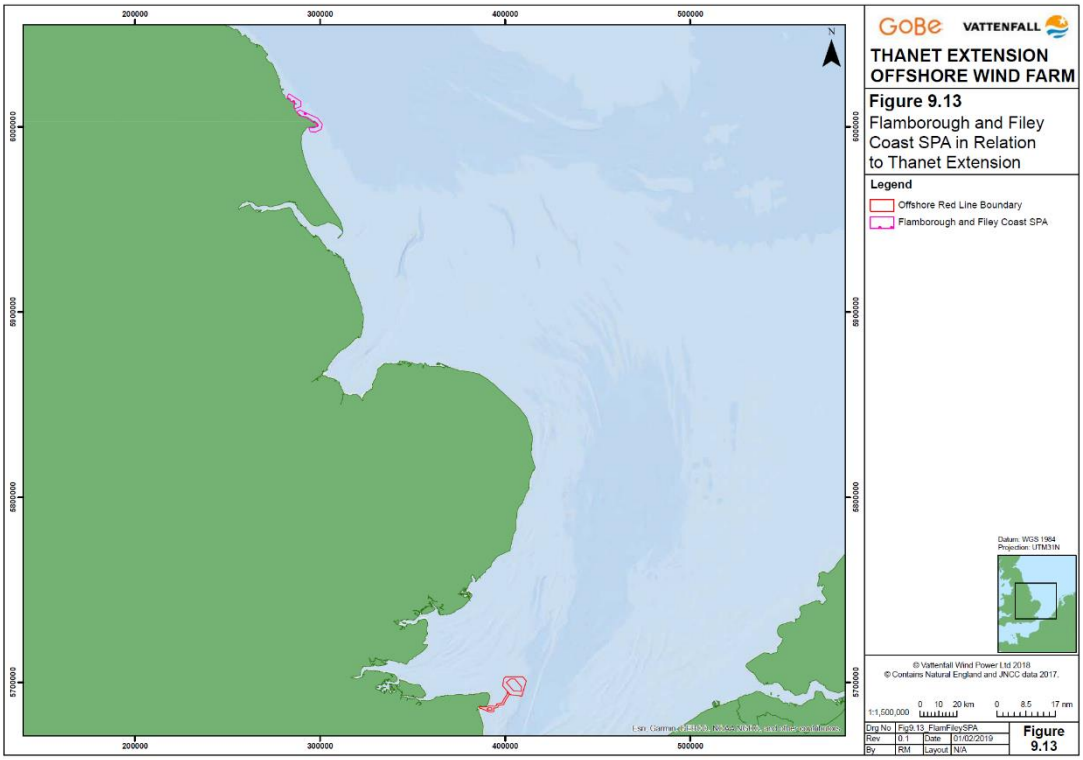
4.48 The Flamborough and Filey Coast ("FFC") SPA is a 7,858 hectare area of coastal and marine habitat supporting breeding seabirds in Yorkshire. The Project is approximately 312 km from the FFC SPA. The Flamborough Head and Bempton Cliffs SPA and the Flamborough and Filey pSPA have been superseded by the formal designation of the FFC SPA which was classified on 23rd August 2018. The SPA citation has a designated kittiwake population of 44,520 breeding pairs in addition to gannet (8,469 breeding pairs), guillemot (41,607 breeding pairs) and razorbill (10,570 breeding pairs), and a breeding seabird assemblage of fulmar, gannet, guillemot, kittiwake and razorbill.

4.49 The conservation objectives for the site were published in 2018[14]. These are set out in Table 7 below.

Table 7 Conservation objectives for the Flamborough and Filey Coast SPA

Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Figure 4: Location of the Project in relation to the Flamborough and Filey Coast SPA



[14] http://publications.naturalengland.org.uk/file/5534523496595456

4.50 A LSE upon the interest features of the site was identified because of the potential for the Project, both alone and in-combination with other plans and projects, to lead to:

- Collision risk and barrier effects upon breeding gannet and kittiwake
- Disturbance and displacement of breeding guillemot and razorbill.
- Impacts upon the breeding seabird assemblage features for the reasons listed above.

4.51 The potential impacts upon each of the qualifying features are set out in Table 8. The breeding seabird assemblage feature of the SPA includes all of the individually cited qualifying features plus northern fulmar. The northern fulmar component species of the breeding bird assemblage was however screened out as having no LSE.

Table 8: Impact upon each feature of the Flamborough and Filey Coast SPA for which LSE was identified (C = construction; O = operation and maintenance; D = decommissioning)

Feature	Disturbance and displacement	Collision risk	Barrier effect	In-combination
Gannet (breeding)		O	O	O
Kittiwake (breeding)		O	O	O
Guillemot (breeding)	C, O, D			C, O, D
Razorbill (breeding)	C, O, D			C, O, D
Breeding seabird assemblage	C, O, D	O	O	C, O, D

4.52 The Secretary of State has considered the potential for the Project to constitute an adverse effect on site integrity for each feature for which a significant effect is likely.

Collision Risk

Alone Assessment: Gannet and Kittiwake

4.53 Thanet Extension is outside of the mean maximum foraging range of 229.4 km +/- 124.3 km (Thaxter et al., 2012) of the gannet breeding colony in the FFC SPA. Outside of the breeding season these birds may pass across the proposed site of Thanet Extension and be placed at risk of collision. The 24 months of aerial survey recorded gannets as being present in the Thanet Extension site in spring and autumn with the highest mean peak abundance of 77 birds with a density of 1.06 birds / km2 estimated during the spring. The majority of gannets from the aerial digital survey abundance estimates (62%) were in flight in the Thanet Extension site and 4 km buffer [RIAA: 11.1.143].

4.54 Thanet Extension is outside of the mean maximum foraging range of 60 km +/- 23.3 km (Thaxter et al., 2012) of the kittiwake breeding colony in the FFC SPA. Outside of the breeding season these birds may pass across the proposed site of Thanet Extension and be placed at risk of collision. The 24 months of aerial survey recorded kittiwakes in the Thanet Extension site during the spring, the breeding season and the autumn with the highest mean peak abundance being 235 birds and density of 3.23 birds / km2 during the autumn. The majority of the kittiwakes from the aerial digital survey abundance estimates (63%) were sitting on the water in the Thanet Extension site [RIAA: 11.4.147].

4.55 Collision risk to gannet and kittiwake from the Project alone (during operation) was considered in the Applicant's RIAA [RIAA: 11.4.142 – 11.4.145; 11.4.146 – 11.4.149]. The Applicant's collision risk modelling was undertaken based on the Band (2012) 'option 2' model using generic bird flight height data.

4.56 NE and RSPB expressed concerns around the Applicant's presentation of Band model 'option 2' outputs without presentation of 'option 1' model outputs alongside [RR-053, RR-057]. NE stated that by using option 2 of the Band (2012) model (rather than option 1, which uses site specific flight height data and nocturnal activity factors), the predicted mortalities may be underestimated [REP1-113, REP1-116]. NE considered [REP1-113] that collision risk modelling predictions using Band model option 1 should be presented alongside Band model option 2 outputs.

4.57 The Applicant presented updated CRM [REP3-058 and REP4-029] which concluded that kittiwake mortality would be between 0.60 and 1.63 birds per annum for the site. Updated calculations were not undertaken for gannet, however RIAA Table 12.15 (replicated at Table 9) demonstrates that the magnitude of collision predictions attributed to the site is the same for gannet and kittiwake

Table 9: Project Alone seabird collision contributions [RIAA: Table 12.15]

Feature	Collision prediction attributed to the site (birds per annum)	Addition to baseline mortality at the site (%)
Gannet	0.43 spring migration 0.17 autumn migration	0.006 spring migration 0.002 autumn migration
Kittiwake	0.43 spring migration 0.17 autumn migration	0.006 spring migration 0.002 autumn migration

4.58 The Applicant concluded no AEoI in the case of both species on the basis that a *'very small number'* of collision risk mortalities would make *'no material difference to the long-term maintenance'* of either the gannet or kittiwake populations.

4.59 NE agreed in its SoCG with the Applicant that collision mortality to both kittiwake and gannet would result in no AEoI of the FFC SPA.

4.60 Regarding gannet specifically, NE stated [REP1-113: 6.4.29] '…although we have concerns that there is potentially an underestimate of collision mortality, we do not think it will change the overall conclusions that there is no significant effect either alone or in-combination'. NE specifically confirm its agreement [REP4-033 and REP5-077] that the Proposed Development alone will not have an AEoI on the gannet population of the Flamborough and Filey Coast SPA.

4.61 Regarding kittiwake specifically, NE stated [REP1-113: 6.4.31] 'Natural England considers that the impacts from the project alone are not likely have an adverse effect on the integrity of Flamborough and Filey Coast SPA'. This position in relation to the Project alone was re-iterated by NE in SoCG with the Applicant [REP4C-008 and REP5-077].

4.62 NE agreed in its SoCG with the Applicant that use of its recommended input parameters for CRM (even at the upper range of mortality) would not change the overall assessment conclusions and would make 'no material difference' to those conclusions.

4.63 The Applicant stated [REP4B-015] that the SEZ does not change the number of wind turbines and that, therefore, there would be no change to the Applicant's existing conclusions around the assessment of collision risk as concluded in the RIAA. NE agreed with this conclusion [REP5-064].

4.64 The ExA states that is satisfied that the Applicant has presented sufficient evidence that the Proposed Development alone would not have an AEoI on either gannet or kittiwake from collision mortality. These conclusions are agreed by NE as reflected in their final SoCG with the Applicant [ExA: 7.8.76].

4.65 Having given due consideration to the information and analysis presented to him, the Secretary of State is in agreement with the ExA and concludes that collision risk to gannet, kittiwake and the

gannet and kittiwake components of the breeding bird assemblage from the Project, from the effects of the Project alone will not have an adverse effect on the integrity of the FFC SPA.

In-combination Assessment: Kittiwake

4.66 Collision risk to kittiwake in-combination was considered by the Applicant [RIAA: Table 12.15; 12.4.29; 12.4.33]. The Applicant concluded no AEoI of the site based on a prediction of collision resultant mortality to a very small number of individuals that makes no material contribution to an in-combination collision risk assessment of the kittiwake population of the SPA. The Applicant re-iterated [REP5-016] its conclusion of no AEoI based on 'a lack of an appreciable contribution to the in-combination collision risk totals for FFC SPA from Thanet Extension, being 0.6-1.63 per year (depending on the level of precaution applied)'

4.67 NE and the RSPB expressed concerns about the Applicant's collision risk methodologies. The Applicant responded to these points through an additional submission at Deadline 1: 'Collision Risk Modelling Parameters and Thanet Extension's Contribution to Cumulative and In-Combination Totals' [REP1-023]. The Applicant also responded [REP3-058] to the possibility raised by NE of using the latest Marine Scotland "Science R-programme" to provide a revised set of outputs for assessment, responding that they were of the view that 'at present this collision risk model is a beta version and it comes without assurance that no issues with its operation and outputs might be found…'. Instead, the Applicant agreed to provide a further set of collision risk modelling outputs that accounted for variance around parameters in relation to nocturnal activity rates and avoidance rates [REP1-023]. The Applicant also submitted a further document 'Offshore Ornithology In-combination Effects Position Paper on Kittiwake and the Flamborough and Filey Coast SPA' [REP4-029] in which it provided further justification to support its conclusion that the Project would not result in an AEoI in-combination; including that all projects included within its in-combination assessment (in relation to kittiwake and Flamborough and Filey Coast SPA) and for which a project specific HRA had been undertaken by the Competent Authority, had formally concluded no AEoI alone and in-combination.

4.68 NE maintained [REP4C-008] that it was not possible to rule out an AEoI of the kittiwake population of the Flamborough and Filey Coast SPA from collision mortality, in-combination with other offshore wind farm projects. However, NE acknowledged that the contribution to kittiwake collision mortality from the Project "…is likely to be small in the context of an in-combination total arising from a number of operational, consented or proposed projects, several of which are larger and/or closer to the SPA, including projects within the likely foraging range during the breeding season" [REP4C-008]. NE further maintained [REP5-064: 8.4] that although the Project "is some distance beyond the likely foraging range of kittiwake from the SPA during the breeding season, there is the potential for the proposal to make a contribution to the overall collision mortality total". NE's position that it was not able to rule out AEoI remained unchanged in an updated version of the Offshore Ornithology SoCG [REP5-077].

4.69 The ExA concluded that the Applicant's approach to the assessment of in-combination effects for the Proposed Development is sufficient [ExA: 7.8.102]. The ExA acknowledged that there remain unresolved matters in relation to agreed conclusions between the Applicant and NE, however the ExA considers that mortality effects for kittiwake from the Proposed Development alone and in-combination are *de minimis* and therefore unlikely to be a significant contributor to any conclusion of AEoI. On that basis the ExA is content to conclude that AEoI from the Proposed Development would not occur alone or in-combination with other plans and projects [ExA: 7.8.104].

4.70 The Secretary of State has considered the representations made by the Applicant, NE, RSPB, and the recommendation as made by the ExA. The Secretary of State notes the methodological disputes between the Applicant and NE and the RSPB and the final position of NE that an overall AEoI from the Project in-combination cannot in its view be ruled out. The Secretary of State however agrees with the recommendations of the ExA that the effect of the Project is *de minimis* and he is

satisfied that the potential impacts on kittiwake as a result of collision mortality from the Project in-combination with other plans and projects would not represent an adverse effect upon the integrity of the FFC SPA.

In-combination Assessment: Gannet

4.71 Collision risk to gannet in-combination was considered by the Applicant [RIAA: Table 12.15; 12.4.29; 12.4.32]. The Applicant concluded no AEoI of the site based on a prediction of collision resultant mortality to be a very small number of individuals that makes no material contribution to an in-combination collision risk assessment of the gannet population of the SPA.

4.72 NE's final position as presented in its SoCG is that: 'Natural England has reviewed the predicted gannet in-combination mortality total for all relevant projects, using a range of plausible future growth rate scenarios for the Flamborough & Filey Coast SPA gannet colony. For all existing projects plus Thanet Extension and Norfolk Vanguard, but not Hornsea 3, we have concluded that even with the decline in future growth rate predicted to arise from in-combination gannet mortalities (as drawn from the gannet PVA presented at the Hornsea 3 examination and also considered at the Norfolk Vanguard examination), the conservation objectives for this feature are likely to be met. Therefore, based on these realistic assumptions regarding the continued predicted growth of the gannet colony, regarding all existing projects plus Thanet Extension plus Norfolk Vanguard but excluding Hornsea 3, Natural England concludes that there is no adverse effect on integrity on the gannet from Flamborough and Filey Coast SPA from Thanet Extension in-combination. However, due to Natural England's significant concerns regarding the incomplete baseline surveys for the Hornsea 3 project, and the associated level of uncertainty as regards the potential impacts of that project, Natural England is not in a position to rule out an in-combination AEoI including the Hornsea 3 proposal.'

4.73 The Applicant maintains [REP8-003] that there would be no AEoI for gannet in-combination with other plans and projects, including Hornsea 3, and that the Project would not cause any appreciable effect on the wider in-combination collision mortality at FFC SPA.

4.74 The ExA concluded that the Applicant's approach to the assessment of in-combination effects for the Proposed Development is sufficient. The ExA states that it is aware of NE's 'significant concerns regarding the incomplete baseline surveys for the Hornsea 3 project' and the extent to which it considers this affects the finding of no AEoI in-combination for the Proposed Development [ExA: 7.8.102]. The ExA acknowledges that there remain unresolved matters in relation to agreed conclusions between the Applicant and NE, however the ExA considers that mortality effects for gannet from the Proposed Development alone and in-combination are *de minimis* and therefore unlikely to be a significant contributor to any conclusion of AEoI. On that basis the ExA is content to conclude that AEoI from the Proposed Development would not occur alone or in-combination with other plans and projects [ExA: 7.8.104].

4.75 The Secretary of State has considered the representations made by the Applicant, NE, RSPB, and the recommendation as made by the ExA. The Secretary of State notes the methodological disputes between the Applicant and NE and the RSPB and the final position of NE that an overall AEoI from the Project in-combination cannot in its view be ruled out. The Secretary of State however agrees with the recommendations of the ExA that the effect of the Project is *de minimis* and he is satisfied that the potential impacts on gannet as a result of collision mortality from the Project in-combination with other plans and projects would not represent an adverse effect upon the integrity of the FFC SPA.

Barrier Effects: Gannet and kittiwake

4.76 The Applicant has concluded no AEoI from barrier effects during operation of the Project either alone or in-combination with other plans and projects based on the 'minimal effect of deviating around the site on migration that makes no material difference to the long-term maintenance of the gannet and kittiwake populations of the Flamborough and Filey Coast SPA' [APP-045: 4.1.153 – 4.1.155].

4.77 The Applicant's conclusions of no AEoI of the FFC SPA from barrier effects to gannet and kittiwake, both from the effects of the Project alone and in combination was not disputed by IPs during the Examination. NE agreed that the significance of barrier effects is negligible [REP2-045].

4.78 The ExA recommends that barrier effects during operation for gannet, kittiwake and the breeding bird assemblage would not result in AEoI alone or in-combination due to 'the minimal effect of deviating around the site on migration that makes no material difference to the long-term maintenance of the gannet and kittiwake populations of the Flamborough & Filey Coast SPA' [ExA: 7.8.66].

4.79 Having given due consideration to the information and analysis presented to him, the Secretary of State is in agreement with the ExA and concludes that barrier effects to gannet, kittiwake and the gannet and kittiwake components of the breeding bird assemblage from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the FFC SPA.

Disturbance and displacement: Guillemot and razorbill

4.80 The Applicant concluded no AEoI of the FFC SPA based on a prediction of displacement resultant mortality to a small number of guillemot and razorbill that makes no material difference to the long-term maintenance of the guillemot and razorbill populations of the FFC SPA. These conclusions also applied to the breeding seabird assemblage (in respect of the species considered).

4.81 The SoCG between the Applicant and NE does not record any dispute with regard to guillemot and razorbill at the SPA nor have any other IPs raised concerns with the Applicant's conclusions on these features.

4.82 The ExA recommends that, based on the information presented in the Applicant's RIAA that there would be no AEoI from the Project alone or in-combination with other plans and projects on the guillemot and razorbill features of the Flamborough and Filey Coast SPA [ExA: 7.8.65].

4.83 Having given due consideration to the information and analysis presented to him, the Secretary of State is in agreement with the ExA and concludes that the effects of disturbance and displacement to guillemot, razorbill and the guillemot and razorbill components of the breeding bird assemblage from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the FFC SPA.

Conclusion on the Flamborough and Filey Coast SPA.

4.84 Given the low magnitude of effects the Secretary of State agrees with the recommendations of the ExA and concludes that the Project will not have an adverse effect on the integrity of the FFC SPA either alone or in-combination with other plans and projects.

Appropriate Assessment: Southern North Sea SAC

4.85 The Southern North Sea ("SNS") SAC was designated on 26 February 2019 for harbour porpoise. The site is located to the east of England and stretches from the central North Sea to the Straits of Dover in the south, covering an area of approximately 36,951km^2. A mix of habitats, such as sandbanks and gravel beds, cover the seabed and water depths range from mean low water to 75m. The majority of the site has water depths of less than 40m. The only qualifying feature is harbour porpoise (*Phocoena phocoena*).

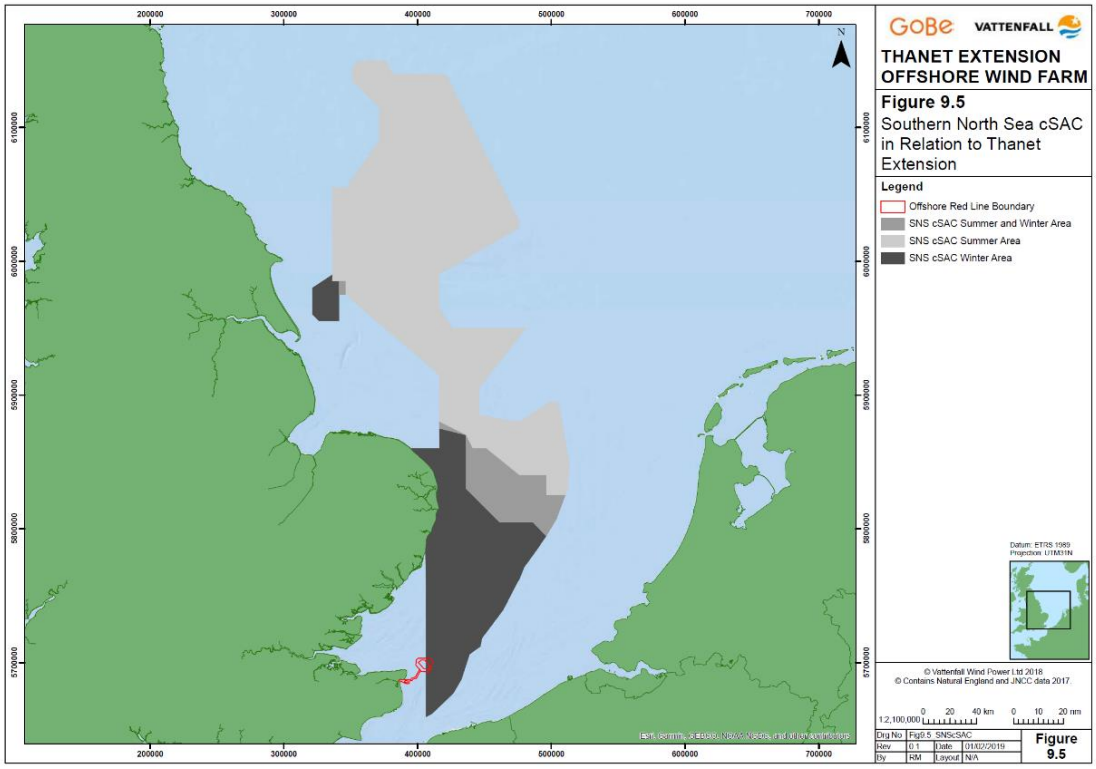
4.86 The conservation objectives (Table 10) for the site were released by the JNCC[15] in March 2019:

Table 10 Conservation objectives for the Southern North Sea SAC

Conservation Objectives	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status for Harbour Porpoise in UK waters In the context of natural change, this will be achieved by ensuring that: 1. Harbour porpoise is a viable component of the site; 2. There is no significant disturbance of the species; and 3. The condition of supporting habitats and processes, and the availability of prey is maintained.

4.87 The Applicant's RIAA is based on the draft conservation objectives for the candidate SNS SAC. The conservation objectives for the SNS SAC became available subsequent to submission of the revised RIAA. NE stated that it did not consider there to be any fundamental effects for the Examination resulting from the SNS SAC being formally designated [REP5-065]. The Project array is within the SNS SAC and the cable route is approximately 4km from the SAC (see Figure 5).

Figure 5: Location of the Project in relation to the Southern North Sea SAC



[15] http://archive.jncc.gov.uk/pdf/SNorthSea_ConsAdvice.pdf

4.88 An LSE upon the harbour porpoise interest feature of the SAC was identified because of the potential for the Project to impact the harbour porpoise feature of the site from:

- Accidental pollution events (from the Project alone) (C, O&M, D)
- Increase in underwater noise (from the Project alone and in-combination) (C, D)

4.89 The potential impacts upon each of the qualifying features are set out in Table 11. The Secretary of State considers each of these potential impacts below.

Table 11: Impact upon each feature of the Southern North Sea SAC for which LSE was identified
(C = construction; O = operation and maintenance; D = decommissioning)

Feature	Accidental pollution	Underwater noise	In-combination
Harbour porpoise	C, O, D	C, D	C, O, D

Accidental Pollution: harbour porpoise

4.90 The Applicant initially screened out LSE arising from accidental pollution during construction, operation, and decommissioning on the basis of embedded mitigation in the form of pollution control plans being in place. However, the Applicant states in its RIAA that 'to ensure full compliance with Sweetman II these measures have not been taken into consideration during screening on a precautionary basis'.

4.91 The Applicant considers that there would be no AEoI on the harbour porpoise feature of the SNS SAC from the effects of pollution as the production, agreement and implementation of relevant plans with the MMO and NE would address any concerns around accidental pollution during construction, operation and decommissioning. The Applicant states that a Project Environmental Management and Monitoring Plan ("PEMMP") will be produced and followed to cover the construction and operation and maintenance phases and incorporate plans to cover accidental spills and potential contaminant releases [APP-048: Table 7.15]. Implementation of the PEMMP is secured in the DCO as part of DML conditions 13 (generation assets) and 11 (export cable system). Following implementation of the relevant plans, the Applicant considers there is sufficient certainty that the risk of accidental pollution at all stages of the Project is negligible and there will therefore be no AEoI (alone and in-combination with other plans and projects). The Applicant's rationale and conclusions in-combination with other plans and projects in respect of accidental pollution are the same as for the effects of the project alone.

4.92 The Applicant's conclusions have not been disputed by any IPs during the Examination and the agreement with the revisions to the RIAA and the conclusions of no AEoI in light of the Sweetman judgement are specifically referenced in the SoCG between NE and the Applicant. On this basis, the ExA agreed that there would be no AEoI on the SNS SAC from accidental pollution during any phase of the Proposed Development, alone or in-combination with other plans and projects [ExA: 7.8.173].

4.93 Having given due consideration to the information and analysis presented to her, the Secretary of State is in agreement with the ExA and concludes that, subject to the mitigation secured in the DML at conditions 11 and 13, the effects of pollution from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the SNS SAC.

Underwater Noise: harbour porpoise

4.94 The Applicant considered a number of sources of underwater noise, including clearance of unexploded ordnance ("UXO"), pile driving, vessel activity and seabed preparation. The potential for these to result in an AEoI has been considered against the conservation objectives for the SNS SAC, together with the seasonal variability of harbour porpoise presence in the SAC and temporal nature of the works.

4.95 For assessing behavioural impacts upon the harbour porpoise feature of the SNS SAC, current SNCB advice states that a standardised precautionary screening distance of 26 km should be used for HRA purposes. The minimum distance between the array boundary and the summer seasonal component of the SAC is 229km, and therefore, beyond the maximum 26km screening. Therefore, for operations within the summer season (April to September inclusive), there would be no spatial effect within the SAC and so summer works are not relevant to the HRA. The Project is however within the winter boundary of the SNS SAC (Figure 5 shows the location of the Project in relation to the Summer and Winter areas). Only those noisy activities carried out in the winter season (October to March inclusive) have the potential for AEoI and require further assessment.

4.96 The Applicant provided information on the impact of underwater noise on the harbour porpoise feature of the SNS SAC in its RIAA. Outstanding disagreement between the Applicant and IPs at the close of Examination centred upon the management of mitigation measures to ensure no AEoI, as opposed to disagreement as to the degree of impact itself. As such, the Applicant's assessment of impact will not be duplicated here. RIAA section 11.3 (alone) and section 12.3 (in-combination) should be referred to for further details of the underwater noise assessment [RIAA: 11.3 and 12.3].

Alone Assessment

4.97 The Applicant is of the view that their various piling construction scenarios clearly demonstrate that under no circumstance will any piling scenario exceed the daily maximum or seasonal average at the SAC. The Applicant also states that there will be no significant effects on the availability and density of suitable prey and the prey habitat (on the basis that "*there is no evidence of a pathway to link underwater noise to the seabed and water column characteristics referred to in the Conservation Objective*" [RIAA: 11.3.23]. The Applicant's view is that all three conservation objectives of the SAC will be met and that, therefore, there will be no AEoI from the effects of the project alone.

4.98 The Applicant proposes specific mitigation for underwater noise [RIAA: Table 6.1] which includes a draft Marine Mammal Mitigation Protocol ("MMMP") (to address the viability aspects considered within the first conservation objective), together with management of activity to ensure the daily and seasonal noise thresholds would not be exceeded (and therefore address the second conservation objective). The RIAA states that the MMMP will outline the soft-start procedure, monitoring, and any other agreed mitigation options deemed necessary, to reduce to negligible levels the potential risk of injury or death to marine mammals in close proximity to piling operations, as well as detailing mitigation for the effects of UXO via a UXO-MMMP.

4.99 NE expressed a view that an additional condition should be included as part of the generation assets DML (to require the production of a Site Integrity Plan ("SIP")) and some adjustments made to the wording of the existing DML condition in relation to the Southern North Sea SAC and the potential for significant impacts on harbour porpoise [RR-053: p15-16].

4.100 Following the designation of the Southern North Sea cSAC in January 2017, there is a statutory requirement for the BEIS and the MMO to undertake a review of certain projects that may be affected by the designation. This Review of Consents process was ongoing at the close of the Examination. The Applicant's SoCG with NE records the latest position: 'The BEIS Review of Consents ("RoC") has concluded that as long as SIPs are placed on all DCOs (in relation to HRA

and in combination impacts on the Southern North Sea SCI[16] for harbour porpoise), there will be no adverse impact on site integrity'.

4.101 The Applicant submitted a draft version of an Outline SIP [REP6-077] which was included as a document to be certified within schedule 11-12 of the DCO and condition 13 of the DML. A 'final SIP' is to be submitted for approval post final scheme design and prior to commencement of construction.

4.102 Despite earlier disagreements, NE confirmed it was content with Applicant's assessment of "soft start" piling [REP1-116]. The SoCG between the Applicant and NE also captured the methodological agreement in this regard [REP5-076]. A conclusion of no AEoI from the Project alone was specifically agreed with NE in their SoCG.

4.103 The ExA states that it is satisfied that "the Proposed Development alone would not result in AEoI to the Southern North Sea SAC, and that sufficient provision is made in the MMMP and Table 6.1 of the revised RIAA which together set out the mitigation measures included in the context of protecting of marine mammals" [ExA: 7.8.174].

4.104 The Secretary of State has considered the representations made by the Applicant, NE, Kent Wildlife Trust ("KWT"), and the recommendation as made by the ExA. The Secretary of State notes that NE agrees with the Applicant that the effects of underwater noise from the project alone would not lead to an adverse effect on the SNS SAC. The Secretary of State is in agreement with the ExA and is satisfied that the potential impacts on harbour porpoise as a result of underwater noise from the Project alone would not represent an adverse effect upon the integrity of the SNS SAC.

In Combination Assessment

4.105 The Applicant identified ten other offshore wind farms with the potential for in-combination effects with the Project:

Table 12: Southern North Sea SAC: Projects considered in-combination
(summarised from RIAA Tables 12.4 and 12.5)

Project	Tier
Borssele 1, 2, 3, 4 & 5	1
East Anglia ONE	1
Triton Knoll	1
Hornsea Project One	1
Hornsea Project Two	1
Dogger Bank Creyke Beck A&B	2
Dogger Bank Teesside A	2
Sofia	2
East Anglia THREE	2
Hornsea Project Three	3

4.106 Plans or projects which could have an effect were grouped into Tiers depending on the likelihood of them going ahead. The Applicant states [RIAA: 12.3] that there is strong presumption of certainty that Tier 1 projects will proceed to construction on the specified timeframe and scale, with these projects having achieved consent, Contracts for Difference ("CfD") and preparing for construction along the scale and timeframe specified. For Tier 2 projects, there is significant uncertainty regarding the timeframes for construction and the final scheme design, both of which will be heavily

[16] Southern North Sea SAC now designated.

influenced by the need for CfD and Final Investment Decision. For Tier 3 and 4 projects, further uncertainty exists as these are pre-consent and/ or pre-application projects

4.107 NE raised concerns around the potential for temporal overlaps between the piling activities of the Project and that of Norfolk Vanguard. The Applicant states that the Vanguard Report to inform HRA considers foundation installation commencing at the earliest Q2 2024 and therefore after completion of piling at Thanet Extension and that no information is available on other noisy activities [RIAA: Table 12.1]. The ExA recommends that the relevant plans and projects have been considered in respect of the in-combination assessment [ExA: 7.8.172].

4.108 The Applicant's in-combination assessment of the effects of underwater noise during construction includes UXO clearance, piling, and geophysical surveys but excludes increased vessel traffic, cable laying/ dredging/ foundation installation and acoustic deterrent devices.

4.109 The Applicant's assessment of the potential for in-combination effects during construction and decommissioning was determined based on timing and location of other projects considered. The Applicant considers that the combination of project specific mitigation (outlined in the RIAA: Table 6.1), the potential for temporal overlap, the seasonal variability of harbour porpoise presence in the SAC, and the staggered nature of construction would ensure that the requirements of the conservation objectives would not be exceeded and therefore no AEoI would result [RIAA: 12.3.15 – 12.3.47].

4.110 Given the location of the Project and seasonality of the SNS SAC, only 'noisy works' during the winter season (October to March) have the potential to contribute to exceedance of relevant thresholds. A complete winter season restriction on noisy activity could be implemented, resulting in no contribution to the thresholds and effectively removing the need for SNS SAC HRA considerations with respect to the Project. The Applicant's position however is that the need for such a seasonal restriction (if any) would be determined at the point the final SIP is drafted. They contend that it may in practice only result in a single winter season being excluded, or a single month, or a combination or no restriction at all [REP4-005].

4.111 As outlined previously, the Applicant submitted a draft version of an Outline SIP [REP6-077] which has been included as a document to be certified within schedule 11-12 of the DCO and condition 13 of the DML with a 'final SIP' to be submitted for approval post final scheme design and prior to commencement of construction.

4.112 Outstanding disagreement between the Applicant and IPs at the close of Examination centred upon the management of mitigation measures to ensure no AEOI in-combination when uncertainty remains about the timescales (and potential concurrency) of the projects when considered in-combination. In the final SoCG between NE and the Applicant at Deadline 6, NE maintained the position that 'Until the mechanism by which the SIPs will be managed, monitored and reviewed is developed, Natural England are unable to advise that this approach is sufficient to address the in-combination impacts and therefore the risk of Adverse Effect on Integrity on the Southern North Sea SCI[17] cannot be fully ruled out.' NE also states that they remain of the view that the seasonal restriction should be specifically secured within the terms of the DCO/ DML to ensure it is enforceable. In absence of this, NE's position is therefore that the risk of AEoI in-combination on the Southern North Sea SAC remains.

4.113 The Applicant's position is that developing a mechanism to 'manage, monitor and review the various SIPs anticipated to come forward' is outside their jurisdiction, and that the RIAA, MMMP, and Outline SIP provide certainty that an AEoI will be avoided with respect to the SAC. The Applicant maintains that the mitigation is wholly within the ability of the Applicant to deliver (with no ambiguity as regards its success), with sign off required from MMO on the appropriateness of that mitigation

[17] Southern North Sea SAC, now designated

through the SIP process. The mitigation does not require different construction techniques, different infrastructure, or additional equipment on site, nor does it require liaison or discussion with other developers [REP4-022: 21-25]

4.114 The Applicant notes NE's agreement in its SoCG that if the Applicant were to accept a voluntary seasonal restriction, there would be no AEoI on the SNS SAC. However, NE and the Applicant remain in disagreement over how best to secure this potential (and voluntary) mitigation measure. The Applicant recognises NE's wish to have a seasonal restriction 'on the face' of the DCO but it 'cannot agree to a seasonal restriction that is not currently required and will only become required should a mechanism to manage a range of SIPs not be in place' [REP8-003].

4.115 The ExA agrees with the Applicant that there is no need for consideration of alternative mitigating techniques or equipment as an absolute seasonal restriction could be delivered through the final SIP if it was indeed required [ExA: 7.8.179]. The provision of a final SIP is secured through DML conditions 13 and 11 (Schedules 11 to 12 of the DCO respectively) and secures that it must be in accordance with the outline SIP and be approved in writing by the MMO in consultation with NE before any licensed activities or any part of those activities under the DML can commence. This could include a full seasonal restriction (if required) and would be subject to the appeals and arbitration provisions (parts 5 and 6 of the DML) where there was dispute between the Applicant and MMO regarding the basis for any written approval being withheld.

4.116 The ExA agrees with the Applicant that inclusion of a seasonal restriction on the face of the DML is unnecessary and that sufficient provisions are made for this restriction with the approval of the final SIP under conditions within the DML [ExA: 7.8.181]. The ExA therefore recommends that 'a conclusion of no AEoI alone and in-combination can be reached on the bases of the SIP provisions in the DML and other plans securing mitigation including the MMMP' [ExA: 7.8.182].

4.117 The Secretary of State has considered the representations made by the Applicant, NE, KWT and the recommendation as made by the ExA. The Secretary of State notes that NE agrees that if the Applicant were to accept a voluntary seasonal restriction, there would be no AEoI on the Southern North Sea SAC. The Secretary of State acknowledges that the detail of the SIP cannot be finalised until the final project design is decided and the degree of temporal overlap with other projects is known. Whilst acknowledging NEs position that AEoI cannot be ruled out unless a seasonal restriction is secured, the Secretary of State agrees with the recommendations of the ExA, that inclusion of a seasonal restriction on the face of the DML is unnecessary and that sufficient provisions are made for this restriction (if required) with the approval of the final SIP under conditions within the DML.

4.118 In agreement with the recommendations of the ExA, the Secretary of State concludes that, subject to the mitigation secured in the DML and DCO, the effects of underwater noise from the Project in combination with other plans or projects would not have an adverse effect on the SNS SAC.

Conclusion on the Southern North Sea SAC

4.119 The Secretary of State concludes that, subject to the mitigation secured in the DML and DCO, the effects of both pollution and underwater noise from the Project, either alone or in-combination with other plans and projects, on the harbour porpoise feature of the SNS SAC would not have an adverse effect on the integrity of the site.

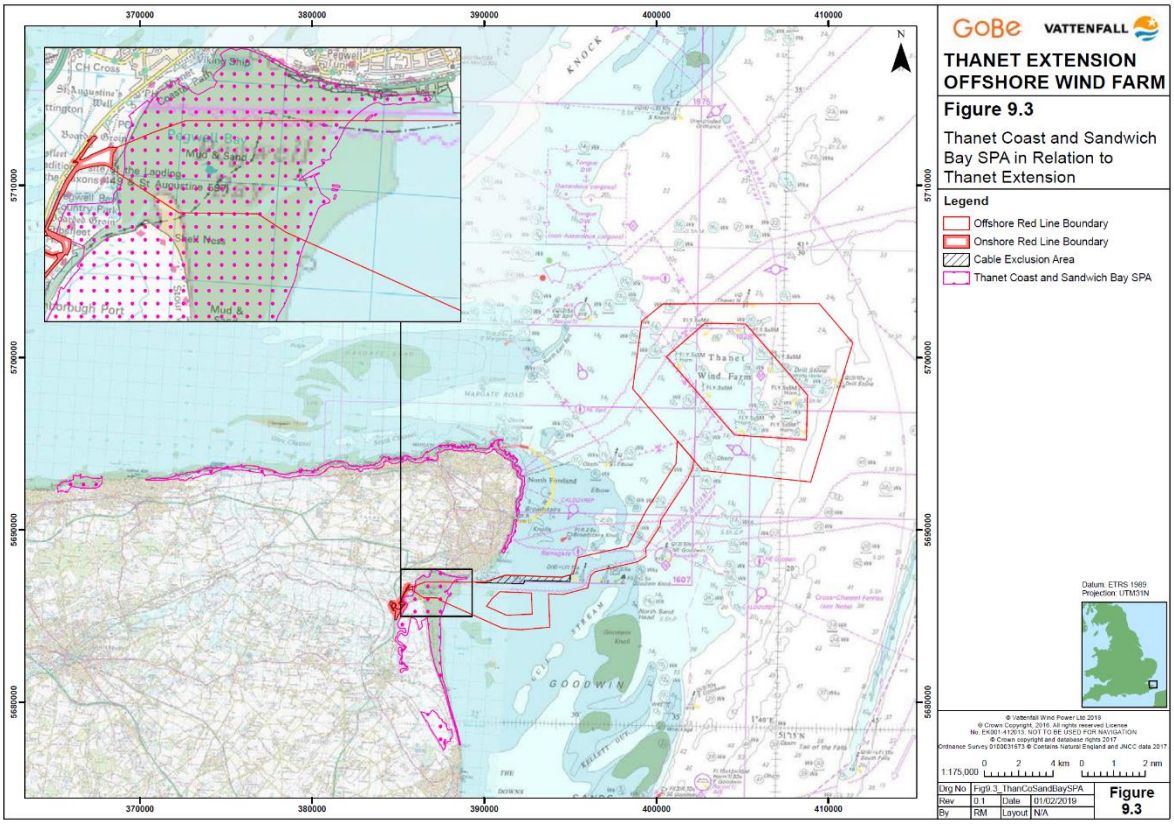
Appropriate Assessment: Thanet Coast and Sandwich Bay SPA and Ramsar

4.120 The Thanet Coast and Sandwich Bay ("TCSB") SPA is a coastal site covering 1,870.16 ha and consisting of a long stretch of rocky shore, adjoining areas of estuary, sand dune, maritime grassland, saltmarsh and grazing marsh. The site holds important numbers of Turnstone and is also used by large numbers of migratory birds as they make landfall in Britain in spring or depart for continental Europe in autumn. The Conservation Objectives for the site as updated in 2014[18], are set out in Table 13 below. The Project array is 8.7km from the TCSB SPA and the cable route is within the SPA. Figure 6 shows the location of the Project in relation to the TCSB SPA.

Table 13: Conservation Objectives for the Thanet Coast and Sandwich Bay SPA

Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features; • The supporting processes on which the habitats of the qualifying features rely; • The population of each of the qualifying features, and • The distribution of the qualifying features within the site.

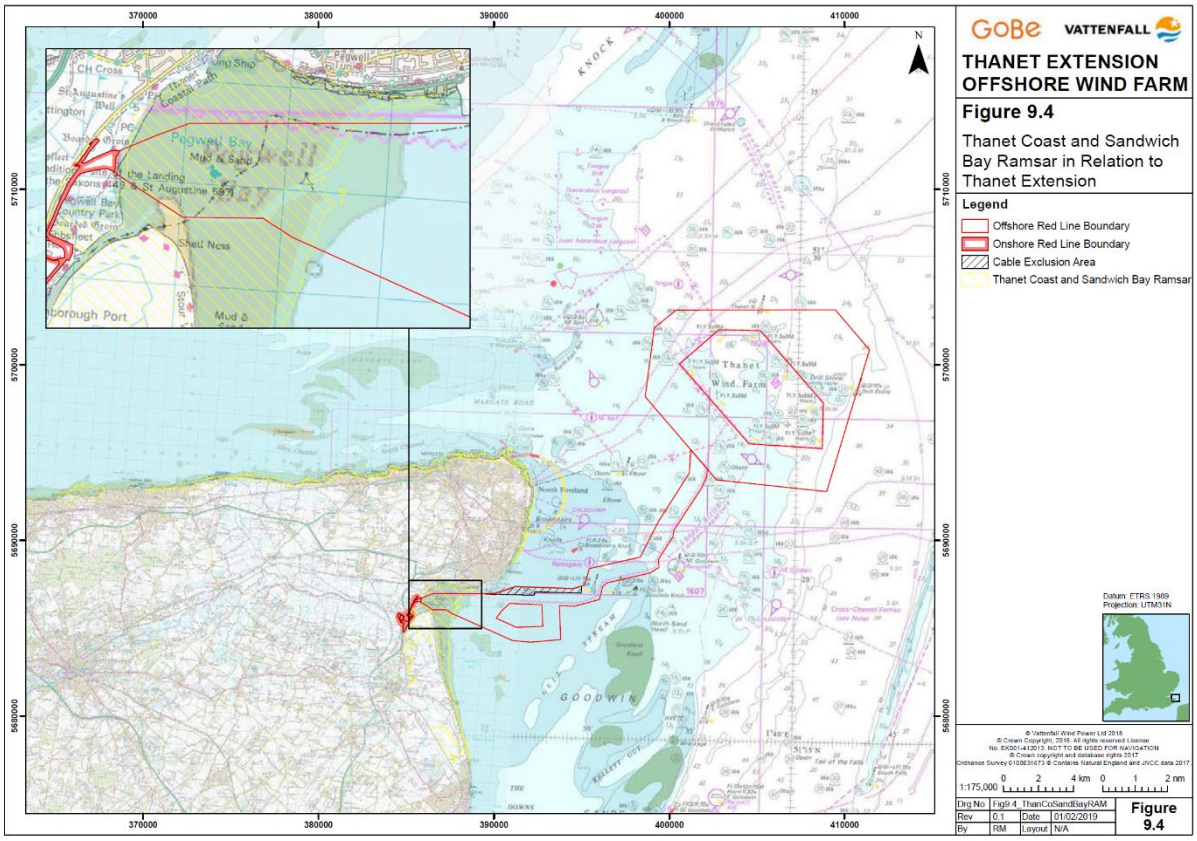
Figure 6: Location of the Project in relation to the Thanet Coast and Sandwich Bay SPA



[18] http://publications.naturalengland.org.uk/publication/6009926887407616?cache=1573726754.75

4.121 The Thanet Coast and Sandwich Bay ("TCSB") Ramsar site covers some 2,169.23 ha of marine and coastal habitat and consists of a long stretch of rocky shore, adjoining areas of estuary, sand dune, maritime grassland, saltmarsh and grazing marsh. The Project array is 8.7km from the TCSB Ramsar and the cable route is within the Ramsar. Figure 7 shows the location of the Project in relation to the TCSB Ramsar.

Figure 7: Location of the Project in relation to the Thanet Coast and Sandwich Bay Ramsar



4.122 A LSE upon the ruddy turnstone and European golden plover interest features of the Thanet Coast and Sandwich Bay SPA was identified because of the potential for the Project, both alone and in-combination with other plans and projects, to impact these features via the pathways outlined in Table 14.

4.123 A LSE upon the ruddy turnstone and wetland invertebrate assemblage interest features of the Thanet Coast and Sandwich Bay Ramsar was identified because of the potential for the Project, both alone and in-combination with other plans and projects, to impact these features via the pathways outlined in Table 15.

4.124 Table 16 outlines the potential impacts upon the features of the TCSB SPA and TCSB Ramsar and upon the intertidal habitats which provide potential roosting and feeding sites for these features that may occur as a result of Project construction, operation and maintenance and decommissioning. These are considered alongside the Applicant's proposed mitigation measures and the Applicant's conclusions on site integrity.

Table 14: Impact upon each feature of the Thanet Coast and Sandwich Bay SPA for which LSE was identified
(C = construction; O = operation and maintenance; D = decommissioning)

Feature	Temporary habitat loss and disturbance	Temporary habitat disturbance	Increased suspended sediment, deposition, and smothering	Accidental pollution	Onshore noise disturbance	Spread of INNS affecting intertidal habitats	Onshore visual disturbance	Displacement
European golden plover (non-breeding).	C, D	O	C, O, D	C, O, D	C, O, D	C, D	C, O, D	C, O, D
Ruddy turnstone (non-breeding);	C, D	O	C, O, D	C, O, D	C, O, D	C, D	C, O, D	C, D

Table 15: Impact upon each feature of the Thanet Coast and Sandwich Bay Ramsar for which LSE was identified
(C = construction; O = operation and maintenance; D = decommissioning)

Feature	Temporary habitat loss or disturbance	Temporary habitat disturbance	Increased suspended sediment, deposition, and smothering	Accidental pollution	Onshore noise disturbance	Spread of INNS affecting intertidal habitats	Onshore visual disturbance	Displacement
Criterion 2: Wetland invertebrate assemblage;	C, D	O	C, O, D	C, O, D		C, D		
Criterion 6: Ruddy turnstone (non-breeding	C, D	O	C, O, D	C, O, D	C, O, D	C, D	C, O, D	C, D

Table 16: Assessment of the effect on the integrity of the TCSB SPA and TCSB Ramsar site
(C = construction; O = operation and maintenance; D = decommissioning)

Impact	Summary of impact on site features
Temporary Habitat Loss or Disturbance (C, D)	Temporary habitat loss and disturbance within the intertidal habitats, including the saltmarsh and mudflat foreshore (which provide potential roosting and feeding sites for the European golden plover feature of the TCSB SPA and ruddy turnstone feature of the TCSB SPA and Ramsar) could occur during construction and decommissioning of the Project alone [RIAA: 11.2.19; 11.2.26-11.2.29]. In respect of European golden plover, in-combination effects could also occur [RIAA: 12.5.2-12.5.4]. Project mitigation includes a Saltmarsh Mitigation, Reinstatement and Monitoring Plan (SMRMP), the content of which has been agreed with NE [REP5-064; REP5-066 and REP5-075]. The Applicant concluded that temporary loss/ disturbance of intertidal habitats will not result in AEoI on the ruddy turnstone feature of the TCSB SPA and Ramsar site alone or the European golden plover feature of the TCSB SPA, either alone or in-combination [RIAA: 11.2.19-11.2.25; 11.2.28;12.5.2-12.5.4]. Temporary loss and disturbance of habitats was also considered in respect to specific species which form part of the wetland invertebrate assemblage of the TCSB Ramsar [RIAA: 11.2.29-11.2.32; 11.5.4-11.5.9]. Project mitigation of relevance to these invertebrate species is set out in the RIAA [RIAA: Table 6.1; 11.2.31; 11.5.7] and includes the implementation of the SMRMP and a Terrestrial Invertebrate Mitigation Strategy (TIMS) (informed by a detailed invertebrate survey), which would form part of the detailed Landscape and Ecological Management Plan (LEMP). The Applicant considers that *Didineis lunicornis* and *Orthotylus rubidus* will readily recolonise new areas of suitable habitat [RIAA: 11.2.31; 11.5.8] and habitat features supporting *Ectemnius ruficornis* and *Eluma caelata* would be translocated where possible [RIAA: 11.5.7]. The Applicant considers that the temporary habitat loss/ disturbance will only affect a small proportion of the available habitat [RIAA: 11.2.27]. The Applicant considers that with the mitigation proposed, temporary habitat loss and disturbance would not result in an AEoI on the wetland invertebrate assemblage [RIAA: 11.2.32; 11.5.5-9].
Temporary habitat disturbance (O)	Temporary disturbance may occur during operation and maintenance within the intertidal habitats, specifically saltmarsh and the mudflat foreshore. This provides potential roosting and feeding sites for European golden plover and ruddy turnstone features of the TCSB SPA [RIAA: 11.2.70-11.2.76] and may be used by roosting and feeding ruddy turnstone and by species in the TCSB Ramsar wetland invertebrate assemblage [RIAA: 11.2.77-11.2.82, 11.5.31-11.5.34]. Should corrective maintenance be required, the Applicant asserted that the potential for habitat disturbance would be similar to that during construction albeit likely on a reduced scale and duration and the SMRMP would apply. The Applicant considers that the proposed mitigation (including TIMS, LEMP and SMRMP as outlined above), combined with previous monitoring of the rapid rate of recovery of similar habitats in the area and the small proportion of the overall habitat

	temporarily affected, means that there will be no AEoI of the European golden plover, ruddy turnstone or wetland invertebrate assemblage or their supporting habitat [RIAA: 11.2.70- 11.2.82 and 11.5.31-11.5.34].
Increased suspended sediment, deposition and smothering (C, O, D)	Increased suspended sediment and deposition on intertidal habitats (which provide potential roosting and feeding sites for European golden plover feature of the TCSB SPA, the ruddy turnstone feature of the TCSB SPA and TCSB Ramsar and by the bug *Orthotylus rubidus* which is part of the Ramsar wetland invertebrate assemblage of the TCSB Ramsar) may occur as a result of Project construction, operation and decommissioning [RIAA: 11.2.49-11.2.58 and 11.2.93-11.2.201]. The Applicant considers that the species and habitats found within the intertidal section of the SPA have a high recoverability to changes in suspended sediment and a high (light deposition up to 5cm) to high-medium (deposition >5cm) recoverability following deposition [RIAA: 11.2.50 and 11.2.93]. The Applicant considers that the wetland invertebrate assemblage species *Orthotylus rubidus* is not likely to be affected by increases in suspended sediment and deposition, even if present [RIAA: 11.2.57]. Further, the Applicant states that any changes to suspended sediment will be local and short term and the intertidal zone of Pegwell Bay is naturally an accretion zone [RIAA: 11.2.49-11.2.58 and 11.2.93-11.2.98]. The Applicant considers that no AEoI of the TCSB SPA or TCSB Ramsar is predicted [RIAA: 11.2.53, 11.2.56, 11.2.58, 11.2.97, 11.2.99, 11.2.101].
Accidental pollution (C, O, D)	The Applicant screened out LSE arising from accidental pollution during construction, operation and decommissioning based on embedded mitigation being in place in the form of pollution control plans [APP-031: Table 6.1]. However, the Applicant's revised RIAA states that 'to ensure full compliance with Sweetman II these measures have not been taken into consideration during screening on a precautionary basis'. Accidental pollution of intertidal habitats (which provide potential roosting and feeding sites for European golden plover feature of the TCSB SPA, ruddy turnstone feature of the TCSB SPA and TCSB Ramsar and for the wetland invertebrate assemblage species *Orthotylus rubiduso* of the TCSB Ramsar) may occur during construction, operation and decommissioning. The Applicant considers that the production and implementation of relevant plans, in conjunction with the MMO and NE, will address the risk of accidental pollution. These plans are summarised in the RIAA [RIAA: 11.2.2-11.2.5, 11.2.59-11.2.61 and Table 6.1]. Taking account of these plans, the Applicant considers there is sufficient certainty that the risk of accidental pollution at all stages of the project is negligible and there will therefore be no AEoI of the site, either alone or in-combination [RIAA: 11.2.4 and 11.2.61; 12.5.7-12.5.8].
Spread of invasive non-native species (INNS) affecting	There is potential for the spread of INNS during construction and decommissioning of the Proposed Development to affect intertidal habitats used by the European golden plover feature of the TCSB SPA, the ruddy turnstone feature of the TCSB SPA and TCSB Ramsar and the wetland invertebrate assemblage species *Orthotylus rubidus* (if present) of the TCSB Ramsar [RIAA: 11.5.2 and 11.5.27]. The Applicant states there are no known INNS within 500m of Stonelees Nature Reserve (in which the wetland invertebrate species *Didineis lunicornis, Ectemnius ruficornis* and *Eluma caelata* may be present) [RIAA: 11.5.27-11.5.30].

intertidal habitats (C, D)	The Applicant considers that the production, agreement, and implementation of the Project Environmental Management Plan (PEMP) and Decommissioning Programme with the MMO and NE will address any concerns around INNS during construction and decommissioning [RIAA: 11.5.2, 11.5.29]. Following implementation of these plans the Applicant considers there is sufficient certainty that the risk of INNS at all stages of the Proposed Development is negligible and there will be no AEoI of the site in this respect [RIAA: 11.5.2].
Onshore noise disturbance (C, O, D)	Noise disturbance to the European golden plover feature of the TCSB SPA and ruddy turnstone feature of the TCSB SPA and TCSB Ramsar may occur as a result of construction, operation and decommissioning of the Project, both alone and in-combination [RIAA: 11.5.10-11.5.15, 11.5.35-11.5.38, 12.5.2-12.5.4, 12.5.9-12.5.12]. Seasonal restrictions to all works within intertidal habitats and at the shoreline will be implemented, restricting construction and decommissioning works with potential to cause significant noise disturbance to non-breeding waterbirds in Pegwell Bay (including European golden plover and ruddy turnstone) as detailed in the Outline LEMP. This will prevent any construction, decommissioning and planned operation/ maintenance works (including HDD works if Landfall Option 1 is selected), taking place in these areas during the period October to March inclusive [RIAA: Table 6.1]. The Applicant considers that although the timing of unplanned operation/ maintenance works is unpredictable, any such works will be undertaken in consultation with SNCBs at the time such works are required, to determine the need for mitigation including the nature and timing of those works [RIAA: Table 6.1]. The Applicant concludes that the proposed timing restrictions will avoid noise disturbance to ruddy turnstone and European golden plover and there is no potential for AEoI of the TCSB SPA or TCSB Ramsar, alone or in-combination [RIAA: 11.5.14-15 and 11.5.38; 12.5.4; and 12.5.12].
Onshore visual disturbance (C, O, D)	Visual disturbance to the European golden plover feature of the TCSB SPA and ruddy turnstone feature of the TCSB SPA and TCSB Ramsar may occur as a result of construction, operation and decommissioning of the Project alone [RIAA: 11.5.10-11.5.15 and 11.5.35-11.5.38] and in respect to European golden plover, from the Project in-combination [RIAA: 12.5.13-12.5.14]. Seasonal restrictions to all works within intertidal habitats and at the shoreline will be implemented, restricting construction and decommissioning works with potential to cause visual disturbance to non-breeding waterbirds in Pegwell Bay (including European golden plover and ruddy turnstone) as detailed in the Outline LEMP. This will prevent any construction, decommissioning and planned operation/ maintenance works (including HDD works if Landfall Option 1 is selected), taking place in these areas during the period October to March. In addition, any works within 250m of intertidal habitats that are undertaken between October and March but are not covered by seasonal restrictions and are in direct line of sight from intertidal habitats, will only take place following the erection of screening fencing. [RIAA: Table 6.1]. The Applicant considers that although the timing of unplanned operation/ maintenance works is unpredictable, any such works will be undertaken in consultation with SNCBs at the time such works are required, to determine the need for mitigation including the nature and timing of those works [RIAA: Table 6.1]. The Applicant concludes that the proposed timing restrictions

	will avoid visual disturbance to ruddy turnstone and European golden plover and there is no potential for AEoI of the TCSB SPA or TCSB Ramsar [RIAA: 11.5.14, 11.5.38, 12.5.13-12.5.14].
Displacement (C, O, D)	Although construction and decommissioning works at the shoreline will be subject to a timing restriction and will not take place during October to March inclusive, other works could take place within Pegwell Bay Country Park during the more sensitive winter months. Disturbance to the European golden plover feature of the TCSB SPA and non-breeding ruddy turnstone feature of the TCSB SPA and Ramsar is therefore possible if recreational users are displaced from the country park to other more sensitive areas elsewhere within the TCSB SPA and TCSB Ramsar due to both the impacts of the project alone [RIAA: 11.5.16-11.5.23] and in-combination [RIAA: 12.5.5-12.5.6]. The Applicant states that car parking data for the period during which construction works for the Nemo Link were taking place strongly suggests that visitor numbers at the country park are not likely to be significantly affected by the proposed construction works. Notwithstanding this, the Applicant has assumed that some displacement of recreational users of the country park is possible [RIAA: 11.5.16-11.5.23]. The Applicant notes NE is concerned that displaced dog walkers could utilise the intertidal habitats, but considers it very unlikely that displaced visitors would utilise the saltmarsh habitats adjacent to Pegwell Bay Country Park which contain deep, wet creeks and are very difficult to walk across [RIAA: 11.5.16-11.5.22]. As a precaution, mitigation has been proposed to discourage any displaced visitors from accessing intertidal habitats during the sensitive October to March period – as detailed in the RIAA [RIAA: Table 6.1] and in the Outline LEMP. The Applicant concludes that there will be no AEoI of the TCSB SPA or TCSB Ramsar either alone or in-combination [RIAA: 11.5.16-11.5.22 and 12.5.5-12.5.6]. The Applicant considers that the potential for displacement of European golden plover feature of the TCSB SPA from planned maintenance works in intertidal habitats from the operational Proposed Development, in-combination with the new 400kV lines of the operational Richborough Connection, is very small and any effects from each project will affect very different habitat types. The Applicant concludes that there will be no AEoI in this regard [RIAA: 12.5.13-12.5.14].

Changes to Cable Route Options

4.125 The Project's proposed cable route crosses part of the TCSB SPA and Ramsar sites, as illustrated in Figures 6 and 7. When the DCO application was submitted [APP-057: 1.3.3], there were three options for the installation of cables at the landfall location, all within the Pegwell Bay Country Park:

- Option 1: Use of Horizontal Directional Drilling ("HDD") from the Pegwell Bay Country Park to the Intertidal mudflats;
- Option 2: A seaward extension of the existing sea wall to allow the export cables to interface from burial within the intertidal mudflat and saltmarsh to a surface laid berm within the Pegwell Bay Country Park; and
- Option 3: Open trenching through the existing sea wall and Pegwell Bay Country Park.

4.126 Concerns over the proposed Landfall Option 2 were raised by a number of IPs as part of their RRs, including Kent County Council, the Environment Agency ("EA"), Kent Wildlife Trust ("KWT"), NE and the RSPB [ExA: 7.4.4]. The loss of habitat associated with Landfall Option 2 was of concern due to impacts on both the TCSB SPA and TCSB Ramsar.

4.127 The Applicant elected to remove Landfall Option 2 from the DCO application during Examination and provided a revised RIAA and revised screening and integrity matrices. The Applicant's proposed mitigation measures and conclusions on site integrity recorded in Table 16 are based on these revised documents.

4.128 With the removal of Landfall Option 2, the Applicant noted that there would be no permanent loss of saltmarsh habitat [RR-053 and REP1-113] as such, the Applicant did not consider it necessary to introduce a DCO/ DML condition (as suggested by NE in [REP1-113]) to avoid permanent loss of saltmarsh habitat. The Applicant acknowledges that temporary habitat loss and disturbance of saltmarsh and other intertidal habitats would still occur and concludes that, taking account of proposed mitigation measures including a SMRMP, that this would not result in an AEoI of the Thanet Coast SPA and Ramsar site (see Table 16 for details).

Alone and In-combination assessment

4.129 As recorded in Table 16, The Applicant concluded that the effects of Project will not result in AEoI on the features of the TCSB SPA or TCSB Ramsar site either alone or in-combination with other plans and projects.

4.130 NE agreed that the removal of the Landfall Option 2 had addressed its key concerns with regard to landfall designs and that, following the removal of Landfall Option 2, the Project, both alone and in-combination, will not result in an AEoI of the TCSB SPA and Ramsar site [NE SoCG]. NE stated that it is in agreement that the Applicant has considered all relevant plans and projects for the determination of in-combination effects on the saltmarsh [NE SoCG].

4.131 NE agreed with the Applicant's conclusion that there is no AEoI alone and in-combination with other plans and projects, citing specifically the golden plover and ruddy turnstone qualifying features: 'The SMRMP has been agreed with the applicant. This plan which is secured within the DCO should provide the relevant mechanisms to monitor, mitigate and if necessary, reinstate areas of saltmarsh damaged by the applicant during construction' [NE SoCG].

4.132 In their comments on the RIES [REP6-095], NE also state that it is 'in agreement that the proposed development will not result in an AEoI for this particular designated site; this is provided that saltmarsh impacts are ultimately temporary in nature. The applicant has taken on board all our comments regarding the SMRMP in order to achieve saltmarsh recovery. This takes into account known best practice regarding working on saltmarsh, has the commitment of regular updates from an ecological clerk of works to quickly respond to any concerns and addresses potential risks regarding topography'.

4.133 There were a number of iterations of the SMRMP during the examination process [APP-147, REP1-073, REP2-032 and REP4-020] and NE's agreement of no AEoI is subject to the SMRMP having been *"updated appropriately"* to reflect their comments on previous iterations of the drafts during the Examination [REP3-043].

4.134 NE stated that HDD under the saltmarsh (Landfall Option 1) "…still represents the best landfall option, as there is more certainty in the environmental outcome" [REP5-064] and reiterated that the saltmarsh provided an important role in supporting the bird species which are qualifying features of the Thanet Coast and Sandwich Bay SPA [REP5-066].

4.135 In terms of other IP submissions relating to these European sites:

- The EA welcomed the removal of Landfall Option 2 [REP3-036] and was satisfied that any concerns they had around the SMRMP were covered by the representations and comments made by NE [REP3-076].
- RSPB agreed that, in its view, '*the project will have no significant impact*' on the TCSB SPA or TCSB Ramsar site [RR-057].
- KWT has maintained its objection to the proposed cable landfall being located at Pegwell Bay and has instead favoured alternative landfall locations [RR-048; REP1-102 and REP3-081]. KWT made the case that Pegwell Bay should have been avoided altogether, due to *"…the numerous* [ecological] *designations and the cumulative disturbance caused by several other large-scale developments…"* [REP3-041]. KWT considered *"…it is not possible to state that the Proposed Development will not damage the integrity of the* [TCSB SPA and Ramsar] *site*" [REP3-081]. KWT's objections are retained through to their final SoCG with the Applicant [REP6-085], although not specifically stating disagreement with the Applicant's conclusions of no AEoI.

4.136 The ExA considered that the development and application of the SMRMP (and its associated provisions) is sufficient to avoid or reduce impacts such that no AEoI on any of the qualifying features of the Thanet Coast and Sandwich Bay SPA and Thanet Coast and Sandwich Bay Ramsar site would occur. The ExA stated that consideration in this regard is taken having regard to the impacts of the Proposed Development alone and in-combination with other plans and projects [ExA: 7.8.22].

4.137 The ExA stated that it had had regard to the concerns and standing objections of KWT but was content that sufficient evidence had been provided by the Applicant to demonstrate that there is no AEoI in respect of these matters [ExA: 7.8.22].

4.138 The ExA stated that it understood the view expressed by NE and others that the HDD landfall installation method is a preferential option (compared with open trenched techniques) because it has a lesser temporary impact upon the saltmarsh (and greater certainty with regards to reinstatement). However, the ExA was content that provisions within the SMRMP and the certainty of its application secured through the DCO (and Export Cable System DML) are sufficient to conclude that AEoI (alone and in-combination) can be excluded for these sites with either Landfall Option 1 or Landfall Option 3 being pursued [ExA: 7.8.23].

4.139 The SMRMP (revision C) is secured by DCO requirement 13 and is a certified document in schedule 13. It is also secured via conditions 15(c) (Pre-construction monitoring surveys) and 17(c) (Post construction) of the Export Cable System DML (DCO schedule 12). The SMRMP includes provisions for consultation with relevant stakeholders, including NE, MMO, EA and TDC through pre and post-construction surveys, monitoring and reinstatement.

4.140 In order to secure the SMRMP in the terrestrial environment, the ExA recommended the inclusion of additional text in requirement 13 of the DCO to mirror the text in condition 15 of the DML (additional text is underlined below):

(1) The undertaker must undertake appropriate surveys at the locations for Works No. 3A and 3B in order to monitor the impact of development authorised by the Order within any areas of saltmarsh, as provided for within the saltmarsh mitigation, reinstatement and monitoring plan.

(2) No part of Work Nos. 3A or 3B may commence until a saltmarsh mitigation, reinstatement and monitoring plan, which must accord with the document certified as the saltmarsh mitigation, reinstatement and monitoring plan and be updated to take account of the final export cable route and chosen installation methodology has been approved pursuant to requirement 10.

(3) In the event that surveys carried out in accordance with paragraph (1) or Schedule 11 condition 27(2)(e) find that ringed plover are present, the saltmarsh mitigation, reinstatement and monitoring plan must include measures the intention of which is to prevent disturbance to ringed plover, following current best practice as advised by Natural England.

4.141 The Secretary of State requested an update or any further information from the Applicant, NE, and any other interested parties on the inclusion of this additional text in DCO requirement 13 in a letter dated 21st November 2019[19]. Responses[20] to the Secretary of State's consultation letters regarding Saltmarsh mitigation are shown in Table 17.

Table 17: Responses to 21st November 2019 Consultation

Organisation	Response
The Applicant	The Saltmarsh Mitigation, Reinstatement and Monitoring Plan (SMRMP) was submitted as a certified document and sets out the approach to be taken to monitoring and reinstatement of the saltmarsh. The SMRMP [REP4-020] was prepared on the worst-case basis that an open cut installation would be required. Therefore, the contents of the SMRMP are not dependant on the final installation method chosen and should a trenchless installation technique be chosen, the SMRMP will still apply although the effects on saltmarsh would be considerably reduced. The requirement to notify the relevant authority with regards the final landfall option, and timing of proposed works, is secured in Requirement 12 of the DCO and resubmission of the SMRMP is not therefore required to fulfil the objective in paragraph 2 of the proposed wording. Furthermore, Natural England agreed in their Statement of Common Ground that the SMRMP provides certainty as to how interactions with saltmarsh will be monitored and recovery assumed [REP6-019]. The SMRMP is therefore appropriately secured as a certified document and through the requirement for surveys secured in both the dDCO and the deemed Marine Licence. The intention of the SMRMP is to provide the aforementioned certainty with regard to saltmarsh recovery post-construction, and it was therefore appropriate that this plan was advanced as a final plan, rather than an outline plan which required subsequent development. The Applicant does not therefore consider that the new paragraph 2 to Requirement 13, as proposed by the Secretary of State, is required.

[19] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010084/EN010084-003071-BEIS%20-%20Thanet%20Extension%20Consultation%20Letter.pdf

[20] https://infrastructure.planninginspectorate.gov.uk/projects/south-east/thanet-extension-offshore-wind-farm/?ipcsection=docs&stage=6&filter1=Secretary+of+State+Consultation

	Paragraph 3 of Requirement 13, as proposed by the Secretary of State, duplicates condition 11(m) of Schedule 12 (Export Cable System dML) which already secures a Ringed Plover Mitigation Plan (should Ringed Plover be found during surveys). The Applicant does not consider it necessary to duplicate the approval of this plan in the Requirements, however if the Secretary of State is minded to include it within Requirement 13 it should be amended to remove reference to the SMRMP and replaced with reference to a 'Ringed Plover Mitigation Plan'.
EA	We have no objection to the proposed additional text suggested by the Secretary of State. We agree with our colleagues in Natural England, letter dated 5 December 2019 that the requirement should state that the plans need to be submitted at least 4 months prior to the proposed works within the saltmarsh. This will allow interested parties time to review them.
MMO	The MMO supports the inclusion of Requirement 13 with regard to the Saltmarsh Mitigation, Reinstatement and Monitoring Plan however advises this should also be included as a condition on the deemed Marine Licence (dML). Saltmarsh falls within the intertidal zone and as such under the MMO's regulatory remit, though it is acknowledged this area is also subject to terrestrial consents. If the DCO is consented the MMO can only enforce conditions that are included on the dML. Please note that the condition on the dML should provide for approval of the Plan by the MMO in consultation with Natural England and should fall within appropriate parameters for approval – e.g. as provided for in Schedule 11, condition 15, unless otherwise agreed by the MMO. The MMO understands Natural England are equally supportive of inclusion of a relevant condition on the dML and defer to their expertise on appropriateness of the wording in addressing their prior representations.
NE	Overall, Natural England is content with the additional text suggested by the SoS. Part (2) will allow the Saltmarsh Mitigation Plan (SMP) to be sufficiently updated following the final decision regarding the final export cable route and landfall methodology. Further still, part (3) ensures that disturbance to ringed plover is prevented by including additional measures in the SMP. However, there needs to a time period stated within the condition to ensure the updated SMP is submitted with enough time for the relevant parties to review it effectively. The condition should state that the plans will be submitted at least 4 months prior to any proposed works within the saltmarsh. If added to the DCO/DML, the conditions should also be added to the overarching pre-construction documentation condition which would link the requirements to the overarching timeframe of submission, 4 months prior to the commencement of construction.

4.142 The Secretary of State requested comments on the responses received in a letter dated 6th January 2020[21]. Responses[22] to the Secretary of State's consultation letter regarding Saltmarsh mitigation are shown in Table 18.

[21] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010084/EN010084-003094-BEIS%20-%20Thanet%20Extension%20Further%20Consultation%20Letter.pdf

[22] https://infrastructure.planninginspectorate.gov.uk/projects/south-east/thanet-extension-offshore-wind-farm/?ipcsection=docs&stage=6&filter1=Secretary+of+State+Consultation

Table 18: Responses to 6th January 2020 Consultation

Organisation	Response
Applicant	The Applicant understands, following discussions with Natural England, that they and the Environment Agency are in agreement with the Applicant's position on saltmarsh mitigation drafting, as set out in the response letter to the Secretary of State dated 13 December 2019. Annex B (page 30): Whilst there is no in principle objection to the additional text there is a risk of complication within the wording because the ringed plover condition already exists. As such the Applicant has provided suggested wording that seeks to avoid the complication. Requirements are determined in accordance with Schedule 10 of the draft DCO. For dML conditions it is agreed that plans, including the SMRMP, should be submitted 4 months prior to the proposed works. Annex D (page 3): In broad terms, subject to the requests made by the Applicant within its previous submission, the Applicant is also content with the proposed wording. In short the Applicant's reservations regarding the suggestion of combining the plover mitigation and saltmarsh reinstatement plans remain, as there is duplication with existing conditions, but the Applicant is content to accept the proposed changes if the Secretary of State considers it necessary to include them. Annex D (page 5): As per the Applicant's original response to the Secretary of State there is a risk of confusion with the proposed wording that can be avoided by ensuring the plover and saltmarsh plans are dealt with by separate conditions. The Applicant also notes that following discussion with Natural England it is understood that Natural England and the Environment Agency also agree with the Applicant's position stated within the original response and will be submitting revised positions. The Applicant recognises and supports the need to submit the plan 4 months before any proposed works in the saltmarsh and can confirm that this timeframe is agreeable for all pre-construction/pre-commencement documentation.
EA	We have been in discussion with Natural England over the Vattenfall's concerns. We understand that Vattenfall wish to decouple the plover and saltmarsh aspects within this requirement. We have no issue with this but we maintain the requirement for further securing the saltmarsh plan as was suggested by the Secretary of State. We also reiterate that the plans need to be submitted at least 4 months prior to the proposed works within the saltmarsh. This will allow interested parties time to review them.
NE	We understand that Vattenfall wish to decouple the plover and saltmarsh aspects within this requirement, and that any mitigation for plover should have regard to the plover mitigation plan rather than the saltmarsh plan (SMRMP). We are content for this separation. Our other comments from our letter dated 05 December 2019 still stand. Natural England further support the comments of the MMO with regards to also securing the requirements of the SMRMP as a condition on the deemed Marine Licence (dML).

4.143 The Secretary of State has considered the representations received and considers that the following additional text should be contained within requirement 13 of the DCO to mirror the text in condition 15 of the DML (additional text proposed by the ExA is underlined below and additional text to this added by the Secretary of State is in bold):

> (1) The undertaker must undertake appropriate surveys at the locations for Works No. 3A and 3B in order to monitor the impact of development authorised by the Order within any areas of saltmarsh, as provided for within the saltmarsh mitigation, reinstatement and monitoring plan.
>
> (2) No part of Work Nos. 3A or 3B may commence until a saltmarsh mitigation, reinstatement and monitoring plan, which must accord with the document certified as the saltmarsh mitigation, reinstatement and monitoring plan and be updated to take account of the final export cable route and chosen installation methodology has been approved pursuant to requirement 10. **The saltmarsh mitigation, reinstatement and monitoring plan must be submitted at least four months prior to any pre-commencement activities.**
>
> (3) In the event that surveys carried out in accordance with paragraph (1) or Schedule 11 condition 27(2)(e) find that ringed plover are present, the **ringed plover mitigation plan** must include measures the intention of which is to prevent disturbance to ringed plover, following current best practice as advised by Natural England.

4.144 The additional text in bold above reflects comments made by IPs:

- The inclusion of the additional text in (2) provides sufficient time for appropriate authorities to effectively consider the updated saltmarsh mitigation, reinstatement and monitoring plan.
- The replacement of 'saltmarsh mitigation, reinstatement and monitoring plan' for 'ringed plover mitigation plan' in (3) reflects the need to decouple these plans.

4.145 The Secretary of State notes NE's advice that the Project, both alone and in-combination, will not result in an AEoI of the TCSB SPA and Ramsar site. He also notes the recommendation as made by the ExA that no AEoI on the TCSB SPA or TCSB Ramsar site would occur.

4.146 In agreement with the recommendations of the ExA, the Secretary of State concludes that, subject to the mitigation secured in the DML and DCO, the Project both alone and in combination with other plans or projects would not have an adverse effect on the integrity of the TCSB SPA or TCSB Ramsar sites.

4.147 The Secretary of State considers that the mitigation secured by requirements in the DCO and conditions in the DML are sufficient to conclude that AEoI (alone and in-combination) can be excluded for both sites with either Landfall Option 1 or Landfall Option 3, in particular the SMRMP (revision C) which is secured by DCO requirement 13 and is a certified document in schedule 13, and is also secured via conditions 15(c) (Pre-construction monitoring surveys) and 17(c) (Post construction) of the Export Cable System DML (DCO schedule 12). The SMRMP includes provisions for consultation with relevant stakeholders, including NE, MMO, EA and TDC through pre and post-construction surveys, monitoring and reinstatement.

Conclusion on the Thanet Coast and Sandwich Bay SPA and Ramsar

4.148 The Secretary of State concludes that, subject to the mitigation secured in the DML and DCO, the effects of the Project, either alone or in-combination with other plans and projects, on the features of the Thanet Coast and Sandwich Bay SPA and Thanet Coast and Sandwich Bay Ramsar, would not lead to an adverse effect on the integrity of these sites.

Appropriate Assessment: Thanet Coast SAC

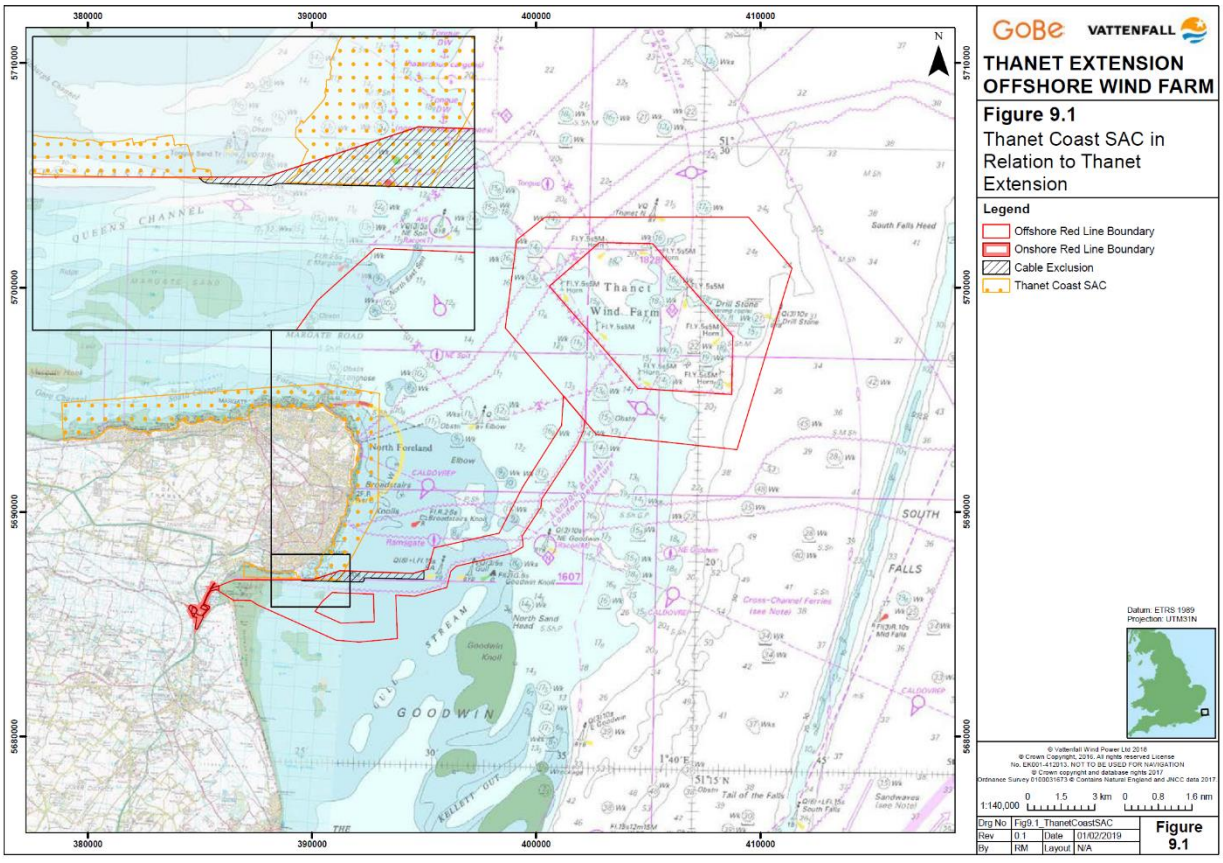
4.149 The Thanet Coast SAC covers 2,815.95 ha of primarily marine habitat along a stretch of approximately 23 km of chalk cliff coastline. The site is designated for the Annex I habitats chalk reefs and submerged or partially submerged sea caves. Thanet coast holds the longest continuous stretch of coastal chalk in the UK, hosting 20% of UK chalk reefs and 12% of European chalk reefs. The coastline provides the second most extensive representation of chalk caves in the UK. The caves support a specialised algal and lichen community.

4.150 The conservation objectives for the Thanet Coast SAC are outlined in Table 19. Figure 8 shows the location of the project in relation to Thanet Coast SAC

Table 19 Conservation Objectives for the Thanet Coast SAC

Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats • The structure and function (including typical species) of qualifying natural habitats, and • The supporting processes on which qualifying natural habitats rely

Figure 8: Location of the Project in relation to the Thanet Coast SAC



4.151 A LSE upon the chalk reef and submerged or partially submerged sea caves interest features of the SAC was identified because of the potential for the Project, both alone and in-combination with other plans and projects, to impact these features via the pathways outlined in Table 20.

Table 20: Impact upon each feature of the Thanet Coast SAC for which LSE was identified

Feature	Temporary habitat loss and disturbance	Temporary habitat disturbance	Increased suspended sediment and deposition	Accidental pollution	Physical processes	In-combination
Chalk reefs	C, D	O	C, O, D	C, O, D	O	C, O, D
Submerged or partially submerged sea caves				C, O, D		C, O, D

4.152 Table 21 outlines the potential impacts upon the features of the Thanet Coast SAC that may occur as a result of Project construction, operation, and decommissioning. These are considered alongside the Applicant's proposed mitigation measures and its conclusions on site integrity, the advice of NE and the recommendations of the ExA.

Table 21: Assessment of AEoI on the Thanet Coast SAC
(C = construction; O = operation and maintenance; D = decommissioning)

Impact	Summary of impact on site features
Accidental pollution (C, O, D)	The Applicant screened out LSE arising from accidental pollution during construction, operation and decommissioning based on embedded mitigation being in place in the form of pollution control plans [APP-031: Table 6.1]. However, the Applicant's revised RIAA states that 'to ensure full compliance with Sweetman II these measures have not been taken into consideration during screening on a precautionary basis'. The Applicant is of the view that the production, agreement and implementation of relevant plans with the MMO and NE would address any concerns around accidental pollution during construction, operation and decommissioning. These measures [summarised in APP-046: Table 5.11, APP-048: table 7.15, and RIAA: 11.2.60-61] include the production of a PEMP to cover the construction and operation and maintenance phases. Following implementation of the relevant plans, the Applicant considers there is sufficient certainty that the risk of accidental pollution at all stages of the project upon the chalk reef and sea cave features of the Thanet Coast SAC is negligible and that there will therefore be no AEoI from the project alone [RIAA: 11.2]. The Applicant states that there is no temporal overlap or chance of any temporal overlap between the Project and any other plans or projects and therefore concluded that there will be no AEoI from the Project in-combination with other plans or projects [RIAA: 12.2]. NE agreed that there will be no LSE on the sea caves qualifying feature [REP1-116] and therefore by extension it follows that they are content to exclude AEoI. No other substantive submissions were made to question the Applicant's conclusions reached in the RIAA that there would be no AEoI of the Thanet Coast SAC from accidental pollution alone or in combination. The ExA agrees with the view of the Applicant (supported by NE) that the production, agreement and implementation of relevant plans with the MMO and NE would avoid AEoI from accidental pollution during construction, operation and decommissioning of the Project. The ExA is also content that these plans are sufficiently secured though provisions in the DCO [ExA: 7.8.137].
Temporary habitat loss and disturbance (C, O, D)	The Applicant did not identify any chalk reef features during its site-specific surveys [RIAA: 11.2.16]. The Applicant is of the view that there would be no direct temporary loss or disturbance of the chalk reef qualifying feature during construction or decommissioning and therefore no AEoI of the site (project alone) [RIAA: 11.2.18]. The RIAA [RIAA: Table 6.1] outlines embedded Project mitigation which includes pre-construction surveys that would be undertaken in advance of construction and that, should chalk reef be identified during these surveys, then these would be subject to the Biogenic Reef Mitigation Plan.

	The Applicant's original RIAA showed the Thanet Coast SAC as being crossed by the proposed Offshore Export Cable Corridor ("OECC") [APP-031: Figure 9.1]. NE stated that it had outstanding concerns regarding impacts from the Project on the chalk reef qualifying feature due to habitat loss and disturbance [RR-053: 2.2.2]. The revised RIAA illustrated that the area of overlap between the red line boundary and Thanet Coast SAC was now covered by a Cable Exclusion Zone ("CEZ") [RIAA: Figure 9.1]. The Applicant states that the introduction of the CEZ [RIAA: Figure 11.6] ensures that the construction (and subsequent decommissioning) of the Project will only result in disturbance to the Thanet Coast SAC as a result of anchoring and not direct cable installation or maintenance [RIAA: 11.2.15]. The Applicant explains that the combination of the absence of the reef feature during site specific surveys, combined with other project level mitigation, results in a conclusion of no direct permanent loss or temporary disturbance to that feature during the operation and maintenance phase and therefore no AEoI (project alone) [RIAA: 11.2.69]. The Applicant was of the view that no plans or projects needed to be screened in to an in-combination assessment for subtidal and benthic intertidal habitats as there is 'no temporal overlap or the chances of any temporal overlap between those plans and projects identified in Table 12.2 (of the RIAA)' [RIAA: 12.2.1]. The CEZ has been secured within the DCO and the cable route now fully avoids all chalk reef features of the SAC (schedule 12 of the DCO (condition 21 of the Export Cable System DML). The Applicant's conclusions for the Project alone have not been disputed by NE. NE noted [REP3-075] their satisfaction with the CEZ and that the cable route now fully avoids all chalk reef features of the SAC. NE agreed that "no further mitigation measures beyond those outlined in the RIAA are necessitated as a result of the assessment conclusions for the Thanet Extension project alone" [REP3-042; REP5-076]. The agreement of no AEoI of the Thanet Coast SAC (alone) is also recorded [REP5-076].
Increased suspended sediment and deposition (C, O, D)	The Applicant states that the magnitude of a change in total suspended sediment would be low during construction and not significant [RIAA: 11.2.42 – 11.2.44]. The Applicant acknowledged there is potential for such sediment to reach the designated chalk reef feature. Literature cited by the Applicant and produced specifically for the SAC found that the reefs have a *'low sensitivity'* to physical damage through siltation [RIAA: footnote 78]. The Applicant concluded that the site's conservation objectives will be maintained in the long-term and there is no AEoI to the chalk reef feature of the Thanet Coast SAC in relation to temporary and short-term increased suspended sediment and associated deposition. The Applicant considers that the magnitude of impact during construction is greater than any during operation and maintenance and so the conclusions remain valid for operational effects [RIES: Stage 2, Matrix 2, footnote c]. The ExA agrees with this conclusion, which has not been disputed by any IPs [ExA: 7.8.118]. In the final SoCG between the Applicant and NE, it is agreed that there would be no AEoI on the Thanet Coast SAC alone or in-combination with other plans and projects [NE SoCG: Table 3]. This agreement specifically cites additional submissions from

	the Applicant, namely the SAC and MCZ Clarification Note and the 'Sand Wave Clearance, Dredging and Drill Arising: Disposal Site Characterisation document'. This agreement is also reflected in NE's comments on the RIES [REP6-095] which states that 'agreement has been reached with the Applicant that there will be no AEoI both alone and in-combination on the Thanet Coast SAC'. The ExA agrees with the findings and conclusions of the Applicant's 'Sand Wave Clearance, Dredging and Drill Arising: Disposal Site Characterisation' document and that the chalk reefs have a "low sensitivity" to physical damage through siltation as demonstrated by cited literature [ExA: 7.8.139].
Physical processes (O)	The presence of foundations, scour protection and cable protection material during Project operation may introduce changes to the local hydrodynamic and wave regime, resulting in potential changes to benthic ecology and habitat suitability for some species. The Applicant determined that any such impacts would be highly localised and of short to medium term duration [APP-043] with a 'negligible' risk for intertidal and subtidal habitats, including the chalk reef feature of the SAC. Therefore, the Applicant concludes no AEoI [RIAA: 11.2.103 – 11.2.105]. These conclusions for the Project alone have not been disputed by NE or other IPs and in this respect, and agreement of no AEoI alone and in-combination is also reflected in NE's comments on the RIES [REP6-095].
In-combination effects (C, O, D)	The Applicant was of the view that no plans or projects needed to be screened in to an in-combination assessment for subtidal and benthic intertidal habitats as there is 'no temporal overlap or the chances of any temporal overlap between those plans and projects identified in Table 12.2 (of the RIAA)' [RIAA: 12.2.1]. Therefore, no AEoI in-combination on all features of the Thanet Coast SAC was predicted by the Applicant. NE stated [REP3-074] that it required further clarification regarding the potential in-combination effects from dredging and disposal at Ramsgate Harbour, although it did not anticipate that any such clarification by the Applicant 'would materially affect the outcome of the relevant assessments' [REP3-074]. KWT and NE also raised the issue of an in-combination assessment of the Dover Harbour Board's consent from the MMO to dredge part of the Goodwin Sands pMCZ [RR-048 and RR-053]. The Applicant considered there to be no potential for temporal overlap of activities [REP1-024] and remains of the view that there would be no AEoI of the Thanet Coast SAC alone and in-combination (including potential effects from suspended sediment and deposition associated with the cable installation and wider cable design envelope including sand wave clearance and cable protection) [REP5-047: 1.7]. NE's agreement of no AEoI in-combination with other plans and projects is reflected in NE's comments on the RIES [REP6-095]: 'agreement has been reached with the Applicant that there will be no AEoI both alone and in-combination on the Thanet Coast SAC'. The SoCG between the Applicant and NE [REP5-076: Table 3], also records agreement that there will be no AEoI of the Thanet Coast SAC alone or in-combination with other plans and projects This agreement specifically cites

	additional submissions from the Applicant at Deadline 5, namely the SAC and MCZ Clarification Note and the Sand Wave Clearance, Dredging and Drill Arising: Disposal Site Characterisation document. The ExA acknowledges the ongoing judicial review of the Dover Harbour Board's consent but is ultimately content that the Applicant's position in relation to in-combination effects is based on the best available evidence as to the potential for a worst-case temporal overlap between these projects and is therefore robust. If the Dover Harbour Board's works were to be delayed or not proceed, the scope for temporal overlap would reduce from worst case, or alternatively there would be none [ExA: 7.8.140].

Alone and In-combination assessment

4.153 The Applicant's conclusions of no AEoI alone is summarised in Table 21. The Applicant was of the view that no plans or projects needed to be screened in to an in-combination assessment for subtidal and benthic intertidal habitats as there is 'no temporal overlap or the chances of any temporal overlap between those plans and projects identified in Table 12.2 (of the RIAA)' [RIAA: 12.2.1].

4.154 NE concluded that 'agreement has been reached with the Applicant that there will be no AEoI both alone and in-combination on the Thanet Coast SAC' [REP6-095].

4.155 The ExA finds that the Applicant's conclusions of no AEoI alone and in-combination with other plans and projects is satisfactory. The ExA is content that relevant plans are sufficiently secured though provisions in the DCO. In particular, the ExA states that the CEZ secured as part of the DCO would act to exclude any direct impacts within the boundary of the Thanet Coast SAC [ExA: 7.8.136]. The ExA also recognises the relatively localised and short-term nature of the works in respect of the SAC, and that operational effects are not likely to affect the long-term maintenance of the chalk reefs feature [ExA: 7.8.138].

4.156 The Secretary of State has considered the representations made by the Applicant and IPs and notes NE's advice that the Project, both alone and in-combination, will not result in an AEoI of the Thanet Coast SAC. She also notes the recommendation as made by the ExA that no AEoI on the Thanet Coast SAC would occur.

4.157 In agreement with the recommendations of the ExA and the advice of NE, the Secretary of State concludes that, subject to the mitigation secured in the DML (condition 21) and DCO (schedule 12) the effects of the Project both alone and in combination with other plans or projects, on the chalk reef and sea cave interest features of the site would not lead to an adverse effect on the integrity of the Thanet Coast SAC.

Conclusion on the Thanet Coast SAC

4.158 The Secretary of State concludes that, subject to the mitigation secured in the DML (condition 21) and DCO (schedule 12), the effects of the Project, either alone or in-combination with other plans and projects, on the features of the Thanet Coast SAC would not lead to an adverse effect on the integrity of these sites.

5. Habitats Regulations Assessment Overall Conclusions

5.1 The Secretary of State has carefully considered all the information presented within the Project application and the representations made by all interested parties.

5.2 The Applicant concluded that the Project would not adversely affect the integrity of any of the thirteen European sites considered, either alone or in-combination with other plans or projects.

5.3 The recommendation of the ExA is that there are no AEoI on any of the thirteen European Sites as a result of the Project either alone or in-combination with other plans or projects.

5.4 The Applicant's conclusion of no AEoI for seven of these thirteen sites was agreed by all interested parties. These sites are:

- Alde-Ore Estuary SPA;
- Alde-Ore Estuary Ramsar;
- Farne Islands SPA;
- Foulness (Mid-Essex Coast Phase 5) SPA;
- Margate and Long Sands SAC;
- Northumberland Marine SPA; and
- St Abb's Head to Fast Castle SPA.

5.5 The Secretary of State has considered the information provided by the Applicant and other IPs in light of the conservation objectives for theses seven European sites. The ExA recommended that it considers that it would be reasonable for the Secretary of State to reach the same conclusion of no AEoI in relation to the impacts of the Project both alone and in-combination [ExA: 7.10.1] for these seven sites. In light of the fact that the Applicant's conclusions of no AEoI were undisputed by all interested parties and considering the recommendations of the ExA, the Secretary of State has undertaken a light touch assessment for these sites (at Table 5), concluding that AEoI can be excluded both alone and in-combination with other plans and projects.

5.6 The Applicant's conclusion of no AEoI for six of the thirteen European sites was disputed by some interested parties:

- Flamborough and Filey Coast SPA;
- Outer Thames Estuary SPA;
- Southern North Sea SAC
- Thanet Coast and Sandwich Bay SPA;
- Thanet Coast and Sandwich Bay Ramsar; and
- Thanet Coast SAC;

5.7 The Secretary of State has therefore made a full assessment of the potential for AEoI at each of these sites. Her conclusions are summarised below:

Outer Thames Estuary SPA

5.8 Having given due consideration to the information and analysis presented to her, the Secretary of State concludes that:

- Collision risk to little tern and common tern from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the OTE SPA.
- Barrier effects to little tern and common tern from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the OTE SPA.
- Disturbance and displacement effects on red-throated diver as a result of the Project alone would not represent an adverse effect upon the integrity of the OTE SPA.
- The Secretary of State notes the methodological disputes between the Applicant and NE and the RSPB with regard to disturbance and displacement effects on red-throated diver as a

result of the Project in-combination with other plans and projects, and the final position of NE that an overall AEoI cannot in its view be ruled out beyond reasonable scientific doubt. The Secretary of State also notes the ExA's recommendation, that it is 'content that effect arising from the Proposed Development, whilst theoretically present, is so minimal as to be within the error margin of relevant assessment and not to be a material consideration' [ExA: 7.8.58] and concludes 'that the contribution from the Proposed Development whilst apparent is beneath any the threshold of significance and de minimis [ExA: 7.10.1]. The Secretary of State concludes that disturbance and displacement effects on red-throated diver as a result of the Project in combination with other plans and projects is *de minimis* and she is satisfied that it would not represent an adverse effect upon the integrity of the OTE SPA. To ensure post consent ornithological monitoring, an offshore ornithological monitoring plan (in accordance with the in-principle offshore ornithological monitoring plan) forms part of DML condition 13 (Pre-construction plans and documentation) and DCO schedule 13.

Flamborough and Filey Coast SPA

5.9 Having given due consideration to the information and analysis presented to him, the Secretary of State concludes that:

- Barrier effects to gannet, kittiwake and the breeding bird assemblage from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the FFC SPA.
- The effects of disturbance and displacement to guillemot, razorbill and the breeding bird assemblage from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the FFC SPA.
- Collision risk to gannet, kittiwake and the breeding bird assemblage from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the FFC SPA.
- The Secretary of State notes the methodological disputes between the Applicant and NE and the RSPB and the final position of NE that AEoI from the effects of collision risk to gannet and kittiwake as a result of the Project in-combination with other plans and projects cannot, in its view, be ruled out. The Secretary of State notes the ExA's recommendation that mortality effects as a result of collision risk to gannet and kittiwake from the Proposed Development alone and in-combination are *de minimis* and therefore unlikely to be a significant contributor to any conclusion of AEoI [ExA: 7.8.104]. The Secretary of State concludes that collision effects on gannet and kittiwake as a result of the Project in combination is *de minimis* and he is satisfied that it would not represent an adverse effect upon the integrity of the FFC SPA.

Southern North Sea SAC

5.10 Having given due consideration to the information and analysis presented to him, the Secretary of State concludes that:

- The effects of pollution on harbour porpoise from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the SNS SAC, subject to the mitigation secured in the DML at conditions 11 and 13.
- The Secretary of State notes NE's agreement that the effects of underwater noise on harbour porpoise from the Project alone would not lead to an AEoI of the SNS SAC. The Secretary of States also notes the ExA's recommendation that sufficient provision is made in the MMMP such that the Project alone would not result in AEoI to the SNS SAC [ExA: 7.8.174]. The Secretary of State concludes that the potential impacts on harbour porpoise as a result of underwater noise from the Project alone would not represent an adverse effect upon the integrity of the SNS SAC, subject to the mitigation secured in the DML for a SIP (condition 11 and 13) and MMMP (condition 11 and 13).
- With regard to the effects of underwater noise on harbour porpoise from the effects of the Project in-combination with other plans and projects, outstanding disagreement between the Applicant and interested parties at the close of Examination centred upon the management

of mitigation measures to ensure no AEoI when uncertainty remains about the timescales (and potential concurrency) of the projects when considered in-combination. NE's advice is that, in the absence of a seasonal restriction, the risk of AEoI in-combination on the SNS SAC cannot be ruled out. The ExA recommends that inclusion of a seasonal restriction on the face of the DML is unnecessary and that sufficient provisions are made for this restriction with the approval of the final SIP under conditions within the DML [ExA: 7.8.181]. The Secretary of State acknowledges that the detail of the SIP cannot be finalised until the final project design is decided and the degree of temporal overlap with other projects is known. Whilst acknowledging NEs position that AEoI cannot be ruled out unless a seasonal restriction is secured, the Secretary of State concludes that inclusion of a seasonal restriction is unnecessary and that sufficient provisions are made for this restriction if necessary with the approval of the final SIP under conditions within the DML. The Secretary of State concludes that potential impacts on harbour porpoise as a result of underwater noise from the Project in combination with other plans or projects would not have an adverse effect on the SNS SAC, subject to the mitigation secured in the DML for a SIP and a MMMP (conditions 11 and 13).

Thanet Coast and Sandwich Bay SPA and Thanet Coast and Sandwich Bay Ramsar

5.11 Having given due consideration to the information and analysis presented to him, the Secretary of State concludes that:

- The effects of temporary habitat loss and disturbance; increased suspended sediment, deposition and smothering; accidental pollution; onshore noise disturbance; spread of INNS affecting intertidal habitats; onshore visual disturbance; and displacement, upon the European golden plover (non-breeding) and ruddy turnstone (non-breeding) features of the site, from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the TCSB SPA.
- The effects of temporary habitat loss and disturbance; increased suspended sediment, deposition and smothering; accidental pollution; onshore noise disturbance; spread of INNS affecting intertidal habitats; onshore visual disturbance and displacement, upon the Wetland invertebrate assemblage and ruddy turnstone (non-breeding) features of the site, from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the TCSB Ramsar.
- Secretary of State considers that the mitigation secured by requirements in the DCO and conditions in the DML (in particular the SMRMP) are sufficient to conclude that AEoI both alone and in-combination with other plans and projects can be excluded for both sites with either Landfall Option 1 or Landfall Option 3.

Thanet Coast SAC

5.12 Having given due consideration to the information and analysis presented to him, the Secretary of State concludes that:

- The effects of temporary habitat loss and disturbance; increased suspended sediment and deposition; accidental pollution; and physical processes, upon the chalk reef or submerged or partially submerged sea caves features, from the Project either alone or in-combination with other plans and projects will not have an adverse effect on the integrity of the Thanet Coast SAC, subject to the mitigation secured in the DML and DCO. In particular, the CEZ secured as part of the DML (condition 21) and DCO (schedule 12) would act to exclude any direct impacts within the boundary of the Thanet Coast SAC

5.13 **The Secretary of State concludes that, subject to the mitigation secured in the DML and DCO, the effects of the Project, either alone or in-combination with other plans and projects, on the features of the thirteen European sites identified, would not lead to an adverse effect on the integrity of these sites.**

6. Transboundary Effects

6.1 Given the potential for the Project to affect mobile features across a wide geographical area (as identified within the RIES), the Secretary of State believes it important to consider the potential impacts on Natura 2000 sites in other European Economic Area ("EEA") States, known as "transboundary sites", in further detail. These do not fall within the scope of HRA but it is Government policy that the Secretary of State will apply the same assessment principles, alongside the HRA process[23]. The ExA also considered the implications for these sites, in the context of looking at the wider Environmental Impact Assessment ("EIA") considerations. The results of the ExA's considerations and the Secretary of State's own views on this matter are presented below.

6.2 The Applicant considered potential impacts on transboundary sites, in accordance with the EIA Regulations[24] advice contained within the Inspectorate's Advice Note Twelve (AN12): Transboundary Impacts and Process[25] and with regard to BEIS' '*Guidelines on the Assessment of Transboundary Impacts of Energy Developments on Natura 2000 Sites Outside the UK*'[26].

6.3 The Applicant's RIAA presents a summary of its assessment of the potential for LSE on Natura 2000 sites outside of the UK. The RIAA considers the impacts upon marine mammals [RIAA: 7.5.15 – 7.5.21] and offshore ornithology [RIAA: 7.5.38 – 7.5.56]. The Applicant identified an extensive list of European sites to be considered.

6.4 The Applicant's RIAA [RIAA: section 13] concluded that there was the potential for LSE at eleven transboundary sites in relation to impacts on marine mammals. The Applicant concluded that there would be no LSEs on any ornithological features at any sites.

Transboundary consultation

6.5 The ExA undertook the EIA transboundary screening process on behalf of the Secretary of State [OD-001]. A first transboundary screening under Regulation 24 of the 2009 EIA Regulations and Regulation 37 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 2017 EIA Regulations) (transitional provisions) was undertaken on behalf of the Secretary of State on 7 July 2017 following the Applicant's request for an EIA Scoping Opinion [OD-001]. The Planning Inspectorate on behalf of the Secretary of State formed the conclusion that the Proposed Development was likely to have a significant effect on the environment in other European Economic Area (EEA) member states in terms of extent, magnitude, probability, duration, frequency or reversibility [ExA: 4.11.3]. The ExA notified the following EEA states of their ability to participate:

- Belgium;
- Denmark;
- France;
- Germany; and
- The Netherlands.

[23] Whilst the Habitats Regulations as domestic UK regulations do not apply to sites outside the jurisdiction of the UK, DECC '*Guidelines on the assessment of transboundary impacts of energy developments on Natura 2000 sites outside the UK'* (March 2015) are applicable and provide that the Secretary of State applies the principles of the Habitats Directive where there are significant effects on Natura 2000 sites in other EEA states.

[24] The first transboundary screening dated 7 July 2017 was completed under Regulation 24 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009. On 16 May 2017 the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) came into force. The Applicant opted to prepare its ES in accordance with the requirements of the 2017 EIA Regulations, and therefore Regulation 32 of these Regulations was applicable for the purposes of the SoS' second transboundary screening process.

[25] https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

[26] https://www.gov.uk/government/publications/guidelines-on-the-assessment-of-transboundary-impacts-of-energy-developments-on-natura-2000-sites-outside-the-uk

6.6 A response was received from the Netherlands, who did not have any comments to make but expressed a wished to be kept informed *'on future developments'* [OD-011]. Denmark responded expressly stating they did not wish to participate in the process [OD-010]. No formal response was received from Belgium or Germany.

6.7 A second transboundary screening was made on 15 August 2018 under Regulation 32 of the 2017 EIA Regulations [OD-001]. No new significant effects were identified at the second screening which could impact on additional EEA member states in terms of extent, magnitude, probability, duration, frequency or reversibility. However, on a precautionary basis, notifications were sent to the same EEA states notified in 2017, including Germany. Notice was sent to France [OD-009], Belgium (which did not respond) and the Netherlands [OD-011] on the basis of potential impacts to marine mammals and commercial fisheries and to Germany (which again did not respond) and Denmark [OD-010] (no comment) on the basis of potential impacts to commercial fisheries alone [ExA: 3.7.2].

6.8 The Applicant's evidence relating to Natura 2000 sites in Belgium, Denmark, Germany, the Netherlands and Sweden was uncontested during the Examination. The ExA concurred with the Applicant's assessment that significant transboundary effects in these countries are unlikely [ExA: 8.5.3].

6.9 The Government of France was the only state to provide a substantive response [OD-009]. The Government of France responded to the Rule 6 letter 'to emphasize the main species at stake for which Natura 2000 sites in France have been designated, which can be impacted by the TEOWF project' [AS-006]. These sites are as follows:

- Caps Gris Nez SPA (FR3110085);
- Banc des Flandres SPA (FR3112006);
- Littoral seino-marin SPA (FR2310045);
- Estuaire de la Canche SPA (FR3110038);
- Estuaire de la Canche SCI (FR3100480);
- Banc des Flandres SCI (FR3102002);
- Récifs Gris Nez Blanc Nez SCI (FR3102003);
- Ridens et dunes hydrauliques SCI (FR3102004); and
- Estuaires et littoral picards: baie de Somme et d'Authie SCI (FR2200346).

6.10 Whilst the Government of France was accorded a full opportunity as an IP to participate in oral hearings and/ or to make WRs, it did not participate beyond initial written submissions. The ExA's Report [ExA: 8.4.1-8.4.7] sets out the input from the Government of France during examination. The matters raised by the Government of France can be broadly split into three categories, as per the content of their technical documents presented.

- Ornithology: Collision risk, loss of habitat and barrier effects to SPAs (and their qualifying features) within France (including in-combination effects);
- Marine mammals: In-combination effects to French SCIs in terms of acoustic disturbance effects to mobile marine mammal species (and the relevant distance thresholds considered by the Applicant); and
- Marine Strategy Framework Directive (MSFD): Potential effects of the Proposed Development and compatibility with the environmental objectives of the 2018-2024 French MSFD plan.

Ornithology

6.11 The Applicant screened out the potential for LSE on ornithological interest features at Natura 2000 sites outside of the UK. The Applicant concluded that the *'very low'* impact of the Proposed Development alone (particularly in respect of collision risks) supports a finding that there would be a *'non-material contribution to any cumulative / in-combination assessment'* [REP1-078: 78] on Natura 2000 site features outside of the UK. The Applicant also points to limitations regarding "access to relevant information on collision risk or other potential impacts predicted from French

OWFs" and that accordingly "these developments were not considered further in a cumulative/in-combination assessment" [REP1-078].

6.12 The Government of France assert [AS-006; REP1-094] that the conclusions of the Applicant represent '*a very light analysis, with few arguments and that the conclusions are very hasty'* [sic] [ExA: 8.4.11].

6.13 Table 22 outlines the views of the Government of France and the Applicant, on the effect on ornithological features at the four French transboundary sites where disagreements exist.

Table 22: Ornithological Effects on French Transboundary Sites

Site	Government of France	Applicant's reasoning for conclusion of no LSE
Caps Gris Nez SPA and Banc des Flandres SPA Collision risk, barrier effect and the loss of habitat on: • black-legged kittiwake, northern gannet, herring gull, great and lesser black-backed gulls (due to breeding and foraging ranges within the TEOWF area) • common murre, razorbill and red-throated loon (migrating and overwintering species crossing the TEOWF area). • northern fulmar, common and sandwich tern, brent goose and "skuas group" (unspecified around breeding, foraging or migrating)	The views of the Government of France were broadly that the Applicant had not provided a sufficiently in-depth study demonstrating (with reference to the above-mentioned species and associated Natura 2000 sites) their presence within and/ or the extent to which they may use the TEOWF area. In its view, the Applicant should have considered the need to implement '*environmental measures to limit the impacts, before affirming that there is no likely effect*', including *'risk reduction measures'* such as rotor clamping [AS-006]. The Government of France also cite difficulties in any assessment of bird migration patterns in a general sense, due to knowledge gaps in feeding areas exploited and technical difficulties in observation, survey and monitoring techniques [AS-006].	The Applicant referred to a list of birds occurring in very small numbers or very infrequently in the TEOWF being considered further in Section 5.2 of the Offshore Ornithology Baseline Technical Report [APP-077]. As part of the HRA screening process for consideration of LSE, if a species occurred in very small numbers or very infrequently, then the Applicant considered potential impacts at the HRA level would be no more than negligible and could be screened out. The Applicant clarified the screening criteria applied to consideration of European or Natura 2000 sites with bird interest features and that these criteria formed the basis of the four French SPAs being screened as having no LSE from the Proposed Development.
Littoral Seino-marin SPA and Estuaire de la Canche SPA: In-combination effects on migratory and wintering birds: northern gannet, alcids, great skua and loons		

6.14 The ExA is of the view that the Applicant has sufficiently demonstrated that significant ornithological transboundary effects are not likely. The ExA notes the concerns raised by the Government of France around the cumulative/ in-combination assessments for offshore ornithological features. The ExA also notes the Applicant's submissions that it was unable to access all relevant information on collision risk or other potential impacts predicted from French OWFs [REP1-078]. However, despite opportunities for oral engagement and for WRs to be provided, no such data was presented by the Government of France during the course of the Examination [ExA: 8.5.5].

6.15 In circumstances where the Government of France was provided with multiple opportunities to advance evidence to refute the Applicant's position but did not do so, the ExA considers that the evidence presented by the Applicant represents the best available scientific information. The ExA has also had regard to the relatively low levels of collision mortality and disturbance and displacement effects predicted from the Proposed Development. On that basis, the ExA is persuaded that the Proposed Development's contribution is likely to be a non-material contribution to any cumulative/ in-combination assessment in terms of SPAs in France. The ExA agrees that it is appropriate for a small proportion of the *'low impacts'* predicted to be apportioned to French Natura 2000 sites but considers it reasonable to conclude there would be no likely significant effects to any of the Natura 2000 sites identified on that basis. The ExA is also content that the Applicant's approach to the screening of ornithological effects on Natura 2000 sites in France (using the same criteria as for UK sites) is sufficiently robust [ExA: 8.5.6].

6.16 In agreement with the conclusions of the Applicant and the recommendations of the ExA, the Secretary of State concludes that the potential for LSE on ornithological interest features at Natura 2000 sites outside of the UK can be screened out.

Marine Mammals

6.17 The Applicant identified LSE at eleven transboundary sites in relation to three marine mammal species (harbour porpoise, harbour seal, and grey seal). The relevant sites and features where the Applicant identified potential for LSE are listed in Table 23:

Table 23: Transboundary sites and features with potential for LSE

Country	Transboundary site	Features with potential for LSE	Impact
France	Bancs des Flandres SCI	harbour porpoise harbour seal grey seal	Accidental pollution Underwater noise
	Baie de Canche et couloir des trois estuaires	harbour seal grey seal	Underwater noise
	Estuaires et littoral picards (baies de Somme et d'Authie)	harbour seal grey seal	Underwater noise
	Recifs Gris-Nez Blanc-Nez	harbour seal grey seal	Underwater noise
	Ridens et dunes hydrauliques du détroit du Pas-de-Calais	harbour seal grey seal	Underwater noise

The Netherlands	Voordelta	harbour seal grey seal	Underwater noise
Belgium	Vlaamse Banken	harbour seal grey seal	Underwater noise
	SBZ1	grey seal	Underwater noise
	SBZ2	grey seal	Underwater noise
	SBZ3	grey seal	Underwater noise
	Vlakte van de Raan	harbour seal grey seal	Underwater noise

6.18 The Applicant's RIAA concluded that AEoI could be ruled out at all eleven sites, both as a result of the Project alone and in-combination with other plans and projects. The Applicant considers that provisions contained in the DCO and DMLs (PEMP and MMMP) would mitigate against any significant environmental effects upon marine mammals both within and outside of UK waters.

6.19 The Government of France raised a number of concerns with the Applicant's assessment. These are discussed below:

1) 26km Harbour Porpoise Screening Distance

6.20 The Government of France raised concerns regarding the finding of no LSE for harbour porpoise as a qualifying feature of the Banc des Flandres SCI and the Gris Nez, Nez Blanc Nez and Ridens et dunes hydrauliques SCI's. The concerns were particularly prevalent in relation to potential for in-combination effect with other French wind projects including Courseulles-sur-Mer, Fécamp and Dieppe Le Tréport [AS-006: 2.3].

6.21 The Applicant adopted a 26km screening threshold for harbour porpoise in line with JNCC advice and the guidance set out in the conservation objectives for the Southern North Sea SAC (see chapter 4 of this report). The Applicant maintains that the impact pathway from piling activity located beyond 26km need not be included within the assessment for harbour porpoise and that the screening distance has been agreed with NE during the Evidence Plan Process [APP-140: item HRA 014]. With the exception of the Banc des Flandres, the other sites raised by the Government of France lie outside of this range and therefore were not screened into the Applicant's assessment.

6.22 The Applicant also cites the fact that:

- There are no formal conservation objectives for the three additional harbour porpoise SCIs referenced by the French authorities; and
- There is no published, credible alternative methodology for the assessment of effects on harbour porpoise (and attempts have been made through enquiries with French colleagues to establish any such methodology) [ExA: 8.4.35].

2) *Additional baseline data*

6.23 The Government of France presented a view [OD-009; AS-006] that there have been shifts in harbour porpoise distribution within the North Sea to the south '*probably causes are: …and the*

installation of offshore wind farms without preliminary studies and without particular precautions carried out on the cetaceans'.

6.24 The Applicant refutes the position of the Government of France in that the location of offshore wind farms does not appear, in their view, to correlate to the assertion that construction at these locations has resulted in the shift in harbour porpoise distribution. This is because the locations of offshore wind farm construction and the location of harbour porpoise (since 1994) appear similar (ExA: 8.4.38).

3) In-combination effects

6.25 The Government of France made representations in respect of the adequacy of the in-combination assessment relating to the other French wind projects identified, including Courseulles-sur-Mer, Fécamp and Dieppe Le Tréport [AS-006: 2.3.2] [ExA: 8.4.39].

6.26 The Applicant clarified that all three projects were considered according to the relevant criteria applied [RIAA: tables 8.2 and 12.2]. Courseulles-sur-Mer was not included due to its range being beyond the maximum screening range of 145km for any of the Natura 2000 sites considered for marine mammals. All three projects lie outside the 26km range for harbour porpoise and have therefore not been considered as part of any in-combination assessment for that species.

6.27 The ExA agrees with the Applicant and considers that provisions contained in the DCO and DMLs would mitigate against any significant environmental effects upon marine mammals both within and outside of UK waters. In particular a MMMP is required where driven or part-driven pile foundations are proposed, and the MMMP must be in accordance with the draft MMMP, forming part of the PEMP under conditions 13 and 11 of the generation assets and export cable system DML's respectively [ExA: 8.5.4]. The ExA is also content that impacts to marine mammals and associated concerns of the Government of France are as per those set out above for sites in Belgium and the Netherlands and that the provisions of the DCO and DMLs would also mitigate against any significant environmental effects on these sites [ExA: 8.5.7].

6.28 The Secretary of State agrees with the conclusions of the Applicant and the recommendations of the ExA and concludes that provisions contained in the DCO and DMLs would mitigate against any AEoI upon marine mammals both within and outside of UK waters.

Marine Strategy Framework Directive (MSFD)

6.29 Government of France raised concerns that the Proposed Development could potentially affect their ability to comply with the requirements of the MSFD, considering the environmental objectives within the 2018-2024 plan around marine mammals and seabirds [AS-006: section II – 2.1 and I – 2.3]].

6.30 In respect of marine mammals, the Applicant considers that the MMMP is sufficient to reduce the risk of permanent threshold shift ("PTS") auditory injury to 'negligible' for all marine mammal species. These conclusions are supported by and evidenced as part of the RIAA.

6.31 The Applicant is content that having regard to the location of the Proposed Development which lies towards 'the outer reaches, or outside, of the mean max foraging range (defined by Thaxter et al, 2012) for most seabirds at colonies within the four French SPAs referred to in the French submission' [REP1-078:pp41-42] significant effects on seabirds in French Natura 2000 sites alone or in-combination would not occur.

6.32 The ExA notes the concerns raised by the Government of France in respect of marine mammals and offshore ornithology about the effect of the Proposed Development on its ability to comply with the requirements of the MSFD (through environmental objectives within the 2018-2024 plan).

On the basis of the available evidence, the ExA is content that in circumstances where it has found no LSE on any Natura 2000 sites outside the UK, there is equally no evidenced basis that the Proposed Development would cause non-compliance with the MSFD outside the UK [ExA:8.5.8]. The Secretary of State agrees with the recommendation of the ExA on this matter.

Conclusions

6.33 The Secretary of State has considered the potential for the Project to effect Natura 2000 sites outside of the UK in EEA States and has considered the information provided by the Applicant and other IPs during the Examination alongside the recommendations of the ExA.

6.34 The Applicant concluded that there would be no LSEs on any ornithological features at any sites. In agreement with the conclusions of the Applicant and the recommendations of the ExA, the Secretary of State is satisfied that the potential for LSE on ornithological interest features at Natura 2000 sites outside of the UK can be screened out.

6.35 The Applicant concluded that there was the potential for LSE at eleven transboundary sites in relation to impacts on marine mammals (harbour porpoise, harbour seal and grey seal) (see Table 22). It concluded that there would be no adverse effects on the integrity of any transboundary site from the effects of impacts upon marine mammals. The Secretary of State agrees with the conclusions of the Applicant and the recommendations of the ExA and considers that provisions contained in the DCO and DML would mitigate against any AEoI upon marine mammals both within and outside of UK waters.

6.36 **The Secretary of State is satisfied that the Project, either alone or in-combination with other plans or projects, will not adversely affect the integrity of any transboundary Natura 2000 site outside of the UK. The Secretary of State is satisfied that all transboundary matters have been sufficiently addressed and that there are no matters outstanding which would prevent the DCO from being made.**

Author: Sophie Thomas, *BSc MSc CEnv MIEMA*
Environmental Manager
Energy Infrastructure Planning Team
Department for Business Energy and Industrial Strategy

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