

**RWE Renewables UK Dogger Bank
South (West) Limited**

**RWE Renewables UK Dogger Bank
South (East) Limited**

**Dogger Bank South Offshore
Wind Farms**

**The Applicants' Response to ExQ1 BGC.1.10 –
Assessment of Cumulative Impacts**

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Glossary

Term	Definition
Array Areas	The DBS East and DBS West offshore Array Areas, where the wind turbines, offshore platforms and array cables would be located. The Array Areas do not include the Offshore Export Cable Corridor or the Inter-Platform Cable Corridor within which no wind turbines are proposed. Each area is referred to separately as an Array Area.
Collision	The act or process of colliding (crashing) between two moving objects.
Cumulative Effects	The combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor / resource.
Cumulative Effects Assessment (CEA)	The assessment of the combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor/resource.
Cumulative impact	The combined impact of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor / resource.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the value, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
Health	State of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.
Horizontal Directional Drill (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossing other obstacles such as roads, railways and watercourses onshore.
Impact	Used to describe a change resulting from an activity via the Projects, i.e. increased suspended sediments / increased noise.

Term	Definition
Landfall	The point on the coastline at which the Offshore Export Cables are brought onshore, connecting to the onshore cables at the Transition Joint Bay (TJB) above mean high water.
Landfall Zone	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) and the Transition Joint Bays (TJBs) inclusive of all construction works, including the landfall compounds, Onshore Export Cable Corridor and intertidal working area including the Offshore Export Cables.
Offshore Export Cable Corridor	This is the area which will contain the offshore export cables between the Offshore Converter Platforms and Transition Joint Bays at the landfall.
Onshore Converter Stations	A compound containing electrical equipment required to transform HVDC and stabilise electricity generated by the Projects so that it can be connected to the electricity transmission network as HVAC. There will be one Onshore Converter Station for each Project.
Onshore Export Cable Corridor	This is the area which includes cable trenches, haul roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the Onshore Converter Stations, Transition Joint Bays or temporary access routes; but includes Temporary Construction Compounds (purely for the cable route).
Order Limits	The limits within which the Projects may be carried.
Outline Onshore Written Scheme of Investigation (WSI)	Project specific document forming the agreement between the Applicants, the appointed archaeologists, contractors and the relevant stakeholders landward of MHWS. The document sets out the methods to mitigate the effects on all the known and potential archaeological receptors within the Hornsea Four onshore Order Limits.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of Receptors include species (or groups) of animals, plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
Special Area of Conservation (SAC)	Strictly protected sites designated pursuant to Article 3 of the Habitats Directive (via the Habitats Regulations) for habitats listed on Annex I and species listed on Annex II of the Directive
Special Protection Area (SPA)	Strictly protected sites designated pursuant to Article 4 of the Birds Directive (via the Habitats Regulations) for species listed on Annex I of the Directive and for regularly occurring migratory species
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South

Term	Definition
	(West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).

Acronyms

Acronym	Definition
CEA	Cumulative Effects Assessment
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DBS	Dogger Bank South
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
ExA	Examining Authority
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables Group
FRA	Flood Risk Assessment
HDD	Horizontal Directional Drill
OCoCP	Outline Code of Construction Practice
PRoW	Public Right of Way
SAC	Special Area of Conservation
SPA	Special Protection Area
SuDS	Sustainable Drainage Systems
WSI	Written Scheme of Investigation

1 Introduction

1. This document has been prepared in response to question BGC.1.10 of The Examining Authority's (ExA) Written Questions (ExQ1) [PD-014] addressed to the Applicants. BGC.1.10 states:

'The ExA notes the information provided in the Cumulative Effects Assessment Screening [APP-101] and in each topic area of the ES regarding cumulative effects. Can you provide a table that presents an assessment of cumulative impacts including the likely significant effects of the Proposed Development with third party developments, including a summary of likely residual cumulative effects that have been assessed as significant in Environmental Impact Assessment (EIA) terms after embedded and applied mitigation, and identify those without any further mitigation or monitoring proposals (and explain why)? Can you provide a plan to identify the cumulative developments considered in the ES, with reference to the Order Limits?

The ExA directs the Applicants to the recent submission to the Mona Offshore Wind Farm (OWF) as an example. This is listed as [REP3-063] within the Mona OWF examination library'
2. There is no standard agreed guidance for the assessment of cumulative effects and practice is varied, with different expectations and interpretations. The overarching method followed in identifying and assessing potential cumulative effects is set out in **Chapter 6 EIA Methodology** [APP-076], **Appendix 6-1 Onshore Cumulative Effects Assessment (CEA) Methodology (Revision 2)** [REP3-009] and **Appendix 6-2 Offshore Cumulative Effects Assessment Methodology** [APP-078]. The approach is based upon the Planning Inspectorate Advice Note Seventeen: Cumulative Effects Assessment¹. The approach to the CEA is intended to be specific to DBS Projects.
3. The CEA within the Environmental Statement, considers the likely effects arising from the Projects alongside the likely effects of other schemes, plans and activities in the vicinity of the Projects, based on the information available in the public domain.
4. As stated in **The Applicants' Responses to ExQ1** [REP3-027] (Table 1-1, page 28), **Appendix 6-1 Onshore CEA Methodology (Revision 2)** [REP3-009] was updated at Deadline 3 to show the geographical extents for those schemes located in the vicinity of the Order Limits and to capture any changes in Order Limits for other schemes which have been included in the onshore CEA long list of schemes. This will assist the ExA in identifying those schemes which have been considered in the onshore CEA.

¹ Planning Inspectorate (2019). Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects.

5. A similar Figure has been created for offshore schemes that were screened in for assessment (i.e. short list). This Figure can found in Appendix A.
6. BGC.1.10 requested the Applicants to review REP3-063 of the Mona Offshore Wind Farm as an example for this document. The Applicants have reviewed REP3-063 of the Mona Offshore Wind Farm and have used it as a basis to produce a tailored document that clearly summarises the Projects' CEA. For each impact assessed in each topic-specific CEA, the following has been provided:
 - The section number of the assessment within that chapter;
 - The full name of the impact as it appears in the assessment;
 - All projects, plans and activities screened into the CEA for that impact;
 - Proposed measures adopted as part of the Projects relevant to that impact; and
 - The residual effect of the CEA for that impact.
7. As the detail and scope of the decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning, each topic-specific CEA assumes the cumulative effects during the decommissioning phase will be no worse than those identified during the construction phase. Decommissioning effects are therefore not listed in the tables within this document.

1.1 Definition

8. The term 'cumulative' in respect of impacts or effects is not defined in either the Environmental Impact Assessment (EIA) Directive or the EIA Regulations. One commonly referenced definition is "*Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project*"². For this review, it is assumed Cumulative Effects (also known as Inter-Project Effects) refers to impacts from one or more project at the same time on a receptor, whereas In-Combination Effects (also known as Intra-Project Effects) refers to the topic-specific impacts, such as noise and air quality, from one project on a receptor.

1.2 Legislative Requirements

9. The Infrastructure Planning (EIA) Regulations 2017 state that an Environmental Statement (ES) should include:
 - Schedule 3 Paragraph 1: "*The characteristics of development must be considered with particular regard to- b) cumulation with other existing development and/or approved development;.....*";

² Walker, L J and Johnston, J (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts and Impact Interactions, European Commission [Accessed 26/03/25]
<http://ec.europa.eu/environment/archives/eia/eia-studies-and-reports/pdf/guidel.pdf>.

- Schedule 3 Paragraph 3: *"The likely significant effects of the development on the environment must be considered in relation to criteria set out in paragraphs 1 and 2, with regard to the impact of the development on factors specified in regulation 5(2), taking into account – g) the cumulation of the impact with the impact of other existing and/or approved development;"*; and
 - Schedule 4 Paragraph 5: *"A description of the likely significant effects of the development on the environment resulting from, inter alia – e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;,*
 - *"The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development."*
10. Other EIA legislation (e.g. Town and Country Planning (EIA) Regulations 2017) mirrors this text.

2 Cumulative Effects Assessment

11. Each topic-specific CEA has been reviewed and a summary of schemes with an identified significant adverse effect in cumulation with the Projects is provided in **Table 2-1** for onshore and **Table 2-2** for offshore. Detailed topic-specific tables are provided in section 2.1 onwards. **Appendix 6-1 Onshore CEA Methodology (Revision 2)** [REP3-009] shows the geographical extents for onshore schemes located in the vicinity of the Order Limits for and Appendix A shows offshore schemes.

Table 2-1 Onshore Cumulative Effects Summary

Project Name	Chapter	Significant Cumulative Residual Effects Identified
A164 and Jocks Lodge Improvement Scheme	Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019]	Moderate Adverse (breeding birds)
	Chapter 21 Land Use (Revision 3) [REP2-023]	Potential for cumulative effects to occur.(permanent agricultural land loss)
	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape character during construction at the Onshore Converter Stations).
Dogger Bank A & B	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape character during operation at the Onshore Converter Stations).
	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
Proposed Birkhill Wood National Grid Substation	Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019]	Moderate Adverse (breeding birds)
	Chapter 21 Land Use (Revision 3) [REP2-023]	Potential for cumulative effects to occur (temporary and permanent agricultural land lost)

Project Name	Chapter	Significant Cumulative Residual Effects Identified
	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape character during operation at the Onshore Converter Stations).
	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
Scotland England Green Link 2 (SEGL2)	Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019]	Moderate Adverse (breeding birds)
Creyke Beck Solar Farm	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape and views during construction, landscape character during operation at the Onshore Converter Stations).
	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
Hornsea 4 Offshore Wind Farm	Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019]	Moderate Adverse (breeding birds)
	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape and visual during construction, landscape character during operation at the Onshore Converter Stations).
	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
JBM Peartree Hill Solar Farm	Chapter 21 Land Use (Revision 3) [REP2-023]	Potential for cumulative effects to occur (temporary and permanent agricultural land lost).

Project Name	Chapter	Significant Cumulative Residual Effects Identified
North Humber to High Marnham Grid Upgrade	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape and visual during construction at the Onshore Converter Stations).
White Hall	Chapter 23 Landscape and Visual Impact Assessment [APP-192]	Potential for significant cumulative effects (landscape and visual during construction and landscape character during operation at the Onshore Converter Stations).
	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
Tickton Bridge Solar Farm	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
Ferry Road Carr Plantation	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)
Creyke Beck Substation Extension	Chapter 27 Human Health [APP-214]	Moderate Beneficial (Wider Social Infrastructure and Resources)

Table 2-2 Offshore Cumulative Effects Summary

Project Name	Chapter	Worst Case Effect Level
Hornsea Four Offshore Wind Farm	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Eastern Green Link 2	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Dogger Bank A and B	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
CCS projects	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Sofia	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)

Project Name	Chapter	Worst Case Effect Level
Dogger Bank C	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Hornsea Three	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Westermest Rough	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Northern Endurance	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Viking Link Interconnector	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)

Project Name	Chapter	Worst Case Effect Level
Outer Dowsing Wind Farm	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Sheringham Shoal	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
East Anglia One North	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Berwick Bank	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Dudgeon	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Rampion 2	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
North Falls	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Five Estuaries	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)

Project Name	Chapter	Worst Case Effect Level
Beatrice	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
East Anglia ONE	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
European Offshore Wind Deployment Centre	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Galloper	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Greater Gabbard	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Gunfleet Sands	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Hornsea Project One	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Hornsea Project Two	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)

Project Name	Chapter	Worst Case Effect Level
Hywind	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Kentish Flats Extension	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Kincardine	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Methil	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Moray East	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Race Bank	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Rampion	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Teesside	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)

Project Name	Chapter	Wort Case Effect Level
Triton Knoll	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Moray West	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Neart na Gaoithe	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Seagreen A and B	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
East Anglia Three	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
East Anglia Two	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Inch Cape	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Norfolk Boreas	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)

Project Name	Chapter	Worst Case Effect Level
Norfolk Vanguard	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Sheringham and Dudgeon Extension Projects	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
ForthWind Offshore Wind Demonstration Project - phase 1	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Blyth Demonstration Project	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Lincs & LID	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
London Array	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Kentish Flats	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
Humber Gateway	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)

Project Name	Chapter	Worst Case Effect Level
Thanet	Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]	Moderate Adverse (operational displacement of Guillemot, operational Collision Risk of Kittiwake and Great Black-backed Gull)
East Inshore, North East Inshore, East Offshore and North East Offshore Marine Plans	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
MCZs: including Cromer Shoal Chalk Beds, Markham's Triangle, Holderness Inshore and Holderness Offshore.	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
No Take Zone (NTZ): Flamborough Head	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
SPAs: including the Wash, North Norfolk Coast, Greater Wash and Humber Estuary.	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
SACs: including Dogger Bank SAC, North Norfolk Coast, The Wash and North Norfolk Coast, Haisborough, Hammond and Winterton, Inner Dowsing, Race Bank and North Ridge, North Norfolk Sandbanks and Saturn Reef, and Southern North Sea.	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on adjacent fishing grounds during construction only)
Dogger Bank D	Chapter 13 Commercial Fisheries [APP-117]	Moderate Adverse (displacement of UK dredgers leading to gear conflict and increased pressure on

Project Name	Chapter	Worst Case Effect Level
		adjacent fishing grounds during construction only)

2.1 Chapter 8 Marine Physical Environment [APP-o8o]

Table 2-3 Schemes, plans and activities screened into the CEA for Chapter 8 Marine Physical Environment [APP-o8o].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 8-61, Table 8-62, section 8.8.2, section 8.8.3, section 8.8.4	Construction	Tier 1 – N/A	<ul style="list-style-type: none">The CEA for marine physical environment has not identified any schemes where significant cumulative effects could arise, therefore no mitigation has been proposed.	
	Changes in suspended sediment concentration and transport due to seabed preparation for foundation installation	Tier 2 <ul style="list-style-type: none">Dogger Bank ADogger Bank B (export cable only)		No potential for cumulative effects
	Changes in suspended sediment concentration and transport due to drill arisings from foundations	Tier 3 <ul style="list-style-type: none">Hornsea Project Four (export cable only)¹Eastern Green Link 2 (EGL2)		No potential for cumulative effects
	Changes in suspended sediment concentration and transport due to array, inter-platform and Offshore Export Cable installation	Tier 4 <ul style="list-style-type: none">Northern EnduranceNorthern Endurance Pipeline		Cumulative effects are not expected.
	Changes in suspended sediment concentration and transport due to cable installation at the landfall	Tier 5 – N/A		Cumulative effects are not expected.
	Deterioration in water quality associated with release of sediment bound contamination	Tier 6 <ul style="list-style-type: none">Dogger Bank DEastern Green Link 3* (EGL3)Eastern Green Link 4* (EGL4)		No potential for cumulative effects
	Changes in seabed level due to seabed preparation for foundation installation	Tier 7 <ul style="list-style-type: none">CCS North Sea Leasing Round SNS Area 1 - Licence CS020 & CS025CCS North Sea Leasing Round SNS Area 3 – Licence CS028CCS North Sea Leasing Round SNS Area 7Aminth Energy InterconnectorContinental LinkNational Grid HND Bootstrap		No potential for cumulative effects
	Changes to seabed level due to drill arisings from foundations			No potential for cumulative effects
	Changes in seabed level due to array, inter-platform and Offshore Export Cable installation			Cumulative effects are not expected.
	Changes to bedload sediment transport due to cable installation at the landfall			Cumulative effects are not expected.
	Indentations on the seabed due installation vessels			Cumulative effects are not expected.
	Operation			
	Changes in tidal regime due to the presence of infrastructure (wind turbines and offshore platforms)	Cumulative effects are not expected.		

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Changes in wave regime due to the presence of infrastructure (wind turbines and offshore platforms)			Cumulative effects are not expected.
	Changes to water circulation (Flamborough Front) due to the presence of infrastructure (wind turbines and offshore platforms)			Negligible Adverse
	Changes to bedload sediment transport and seabed morphology due to the presence of infrastructure			Cumulative effects are not expected.
	Changes to bedload sediment transport and seabed morphology due to the presence of cable protection measures			Cumulative effects are not expected.
	Cable repairs and reburial			No potential for cumulative effects.
	Deterioration in water quality associated with release of sediment bound contamination due to cable repairs and reburial			No potential for cumulative effects.
	Loss of seabed area due to the footprint of foundations			Negligible Adverse
	Indentations on the seabed due to maintenance and repair vessels			No potential for cumulative effects.

*Current routes detailed publicly are for illustrative purposes only, but if accurate are projected to cross the Projects Offshore Export Cable Corridor.

¹ Hornsea Project Fours array area is outwith the ZOI and therefore not screened into this CEA.

Impact numbers are not included in Chapter 8.

2.2 Chapter 9 Benthic and Intertidal Ecology [APP-o85]

Table 2-4 Schemes, plans and activities screened into the CEA for Chapter 9 Benthic and Intertidal Ecology [APP-o85].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 9-21, Table 9-22, section 9.8.2, section 9.8.3	Construction	Tier 1 <ul style="list-style-type: none"> Hornsea Project Four export cable¹ Tier 2 <ul style="list-style-type: none"> Sofia¹ Dogger Bank A Dogger Bank B 	<ul style="list-style-type: none"> The significance of residual effect is reliant on the implementation of the embedded mitigation measures provided in Table 9-3 of Chapter 9. Embedded mitigation is also detailed within the Commitments Register (Revision 2) [REP2-025] and cross-referenced within Table 9-3. 	
	Impact 1: Temporary physical disturbance			Minor Adverse
	Impact 2: Increased suspended sediment concentrations (including sediment deposition and smothering)			Minor Adverse

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 3: Remobilisation of contaminated sediments	Tier 3 <ul style="list-style-type: none">Dogger Bank C¹Eastern Green Link 2 (EGL2) Tier 4 <ul style="list-style-type: none">Northern EnduranceNorthern Endurance Pipeline Tier 5 – N/A Tier 6 <ul style="list-style-type: none">Dogger Bank DEastern Green Link 3* (EGL3)Eastern Green Link 4* (EGL4) Tier 7 <ul style="list-style-type: none">CCS North Sea Leasing Round SNS Area 1 Licence CS020 & CS025CCS North Sea Leasing Round SNS Area 3 Licence CS028CCS North Sea Leasing Round SNS Area 7Aminth Energy Interconnector*Continental Link*National Grid HND Bootstrap*		No potential for cumulative effects.
	Impact 4: Underwater noise and vibration			No potential for cumulative effects.
	Operation			
	Impact 1: Temporary physical disturbance			Minor Adverse
	Impact 2: Increased suspended sediment concentrations (including sediment deposition and smothering)			Minor Adverse
	Impact 5: Permanent habitat loss			Minor Adverse Adverse
	Impact 6: Interactions of EMF (including potential cumulative EMF effects)			No potential for cumulative effects.
	Impact 7: Colonisation of introduced substrate, including non-native species			Minor Adverse

* Cable route not yet finalised.

¹ Sofia and Dogger Bank C's export cable, and Hornsea Project Fours array area are outwith the ZOI and therefore not screened into this CEA.

2.3 Chapter 10 Fish and Shellfish Ecology [APP-091]

Table 2-5 Schemes, plans and activities screened into the CEA for Chapter 10 Fish and Shellfish Ecology [APP-091].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 10-26, Table 10-27, section 10.7.3, section 10.7.4	Construction	Tier 1 <ul style="list-style-type: none"> Westermost Rough Humber Gateway Northern Endurance Northern Endurance Pipeline CCS North Sea Leasing Round SNS Area 1 - Licence CS020 & CS025 CCS North Sea Leasing Round SNS Area 3 - Licence CS028 CCS North Sea Leasing Round – SNS Area 5 CCS North Sea Leasing Round – SNS Area 6 CCS North Sea Leasing Round – SNS Area 7 Viking Link Interconnector Tier 2 <ul style="list-style-type: none"> Sofia Dogger Bank A Dogger Bank B Tier 3 <ul style="list-style-type: none"> Dogger Bank C Hornsea Project Three Hornsea Project Four Eastern Green Link 2 (EGL2) Tier 4 – N/A Tier 5 – N/A Tier 6 <ul style="list-style-type: none"> Dogger Bank D Eastern Green Link 3 (EGL3) Eastern Green Link 4 (EGL4) Tier 7 <ul style="list-style-type: none"> Aminth Energy Interconnector* Continental Link* National Grid HND Bootstrap* 	<ul style="list-style-type: none"> Embedded mitigation is detailed within the Commitments Register (Revision 2) [REP2-025] and cross-referenced within Table 10-3 of Chapter 10. 	
	Impact 1: Temporary Habitat Disturbance to Fish and Shellfish Species and Spawning and / or Nursery Grounds			No potential for cumulative effects.
	Impact 2: Increase in Local Suspended Sediment Concentrations and Sediment Settlement.			No potential for cumulative effects.
	Impact 3: Release of Sequestered Contaminants Following Sediment Disturbance.			No potential for cumulative effects.
	Impact 4: Impacts on Fish and Shellfish Species as a Result of Noise and Vibration.			Minor Adverse
	Impact 5: Effect on Fish Stocks of Reduced Fishing Pressure Within the Array Areas and Increased Fishing Pressure Outside of the Array Area			No potential for cumulative effects.
	Operation			
	Impact 1: Temporary Habitat Disturbance to Fish and Shellfish Species and Spawning and / or Nursery Grounds			No potential for cumulative effects.
	Impact 2: Increase in Local Suspended Sediment Concentrations and Sediment Settlement.			No potential for cumulative effects.
	Impact 3: Release of Sequestered Contaminants Following Sediment Disturbance.			No potential for cumulative effects.
	Impact 4: Impacts on Fish and Shellfish Species as a Result of Noise and Vibration.			Minor Adverse
	Impact 5: Effect on Fish Stocks of Reduced Fishing Pressure Within the Array Areas and Increased Fishing Pressure Outside of the Array Area			No potential for cumulative effects.
	Impact 6: Permanent Loss of Habitat and / or Change in Habitat Type as a Result of Changes in Substrate Composition.			Minor Adverse

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 7: EMF Effects Arising from Cables.			No potential for cumulative effects.

* Cable route not yet finalised.

2.4 Chapter 11 Marine Mammals [APP-095]

Table 2-6 Schemes, plans and activities screened into the CEA for Chapter 11 Marine Mammals [APP-095].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
<p>Table 11-109</p> <p>Table 11-142</p> <p>Section 11.7.2 of the chapter refers to Appendix 11-5 - CEA Screening [APP-101] for projects considered.</p> <p>Appendix 11-5 - CEA Screening [APP-101] also defines the impacts.</p>	Construction	Tier 1 – N/A	<ul style="list-style-type: none"> Mitigation and monitoring will be secured through the management plans listed in Table 11-137 of Chapter 11. The Outline Marine Mammal Mitigation Protocol (Revision 4) [document reference 8.25] for both piling and UXO clearance and In Principle Site Integrity Plan for the Southern North Sea Special Area of Conservation (Revision 3) [REP2-049] are submitted with the DCO application. Vessel movements, where possible, would follow set vessel routes where available and hence areas where marine mammals are accustomed to vessels, in order to reduce any increased collision risk. These measures would be detailed within the Project Environmental Management Plans as secured through a Deemed Marine Licence Condition. 	
	Cumulative Impact 1: Assessment of underwater noise from piling at other OWFs (Permanent Auditory Injury due to Underwater Noise, Temporary Auditory Injury and Disturbance from Underwater Noise)	Tier 2 – N/A Tier 3 – N/A <ul style="list-style-type: none"> East Anglia Hub (One North) Hornsea Project Four Hornsea Project Three Seagreen 1A 		<p>Minor Adverse (harbour porpoise, white-beaked dolphin and minke whale).</p> <p>Negligible Adverse (bottlenose dolphin, grey seal and harbour seal).</p> <p>For common dolphin, no other OWF piling has been included as noted above, and therefore there is no cumulative impact due to piling for that species.</p>
	Cumulative Impact 2: Assessment of disturbance from other industries and activities	Tier 4 – N/A <ul style="list-style-type: none"> Berwick Bank Dudgeon Extension Greenvolt Rampion 2 Sheringham Shoal Extension West Of Orkney Galene 		<p>Minor Adverse (harbour porpoise, bottlenose dolphin, minke whale, grey seal and harbour seal).</p> <p>Negligible Adverse (Common dolphin and white-beaked dolphin).</p>
	Cumulative Impact 3: Cumulative Barrier Effects from Disturbance of OWF	Tier 5 <ul style="list-style-type: none"> Five Estuaries North Falls Outer Dowsing Sea Link 		Minor Adverse (all marine mammal species)
	Cumulative Impact 4: Increased Collision Risk with Vessels	Tier 6– N/A		Minor Adverse (all marine mammal species)
	Cumulative Impact 5: Disturbance at Seal Haul-Out Sites	Tier 7– N/A		Minor Adverse (all marine mammal species)
	Cumulative Impact 6: Changes to Prey Resources	UK aggregate and dredging schemes <ul style="list-style-type: none"> Greenwich Light East3F (473/1) Greenwich Light East2 (473/2) Greenwich Light East4F (473/1) Greenwich Light East (473/2) Inner Dowsing5F (481/1-2) 		C: Negligible Adverse to Minor Adverse (all marine mammal species)

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
		<ul style="list-style-type: none"> Inner Dowsing6F (481/1-2) Median Deep Thames D West Bassurelle3 (458 & 464) West Bassurelle4 (458 & 464) West Wight 		

All operational effects have been screened out of assessment.

2.5 Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12]

Table 2-7 Schemes, plans and activities screened into the CEA for Chapter 12 Offshore Ornithology (Revision 3) [document reference 7.12].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 12-88, Table 12-89, section 12.10.3, section 12.10.4, section 12.10.5, section 12.10.6	Construction	Tier 1 <ul style="list-style-type: none"> Beatrice Beatrice Demonstrator Blyth Demonstration Project Dudgeon East Anglia ONE European Offshore Wind Deployment Centre Galloper Greater Gabbard Gunfleet Sands Hornsea Project One Hornsea Project Two Humber Gateway Hywind Kentish Flats Kentish Flats Extension Kincardine Lincs London Array Lynn and Inner Dowsing (LID) Methil Moray East Race Bank Rampion Scroby Sands Sheringham Shoal Teesside Thanet 	<ul style="list-style-type: none"> The Applicants have committed to Natural England's request to use existing shipping lanes whilst crossing the Greater Wash Special Protection Area (SPA) and as far as 2km beyond the SPA boundary for vessel movements which are transiting the SPA, as well as standard practice mitigation for red-throated diver (e.g. avoiding flocks of divers, etc.). This commitment is captured in the Outline Project Environmental Management Plan (Revision 2) [REP2-041] and Commitments Register (Revision 2) [REP2-025]. The significance of residual effect is also reliant on the implementation of the embedded mitigation measures provided in Table 12-4 of Chapter 12. 	
	Impact 1 and Impact 7: Direct Disturbance and Displacement			No potential for cumulative effects, except red-throated diver, see Impact 9.
	Impact 2 and Impact 8: Indirect Impacts Through Effects on Habitats and Prey Species			No potential for cumulative effects.
	Impact 9 Cumulative Assessment of Construction Effects on Red-throated Diver			Minor Adverse
	Operation			
	Impact 10 Cumulative Assessment of Operational Displacement			Negligible Adverse to Minor Adverse (Gannet) Minor Adverse to Moderate Adverse (Guillemot)

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	(Table 12-88, Impact 3: Direct Disturbance and Displacement)	<ul style="list-style-type: none"> Triton Knoll Westermost Rough 		Minor Adverse (Razorbill) Minor Adverse (Puffin)
	Impact 4: Indirect Impacts Through Effects on Habitats and Prey Species	Tier 2 <ul style="list-style-type: none"> Dogger Bank A & B Moray West Neart na Gaoithe Seagreen A and B 		No potential for cumulative effects.
	Impact 11 Cumulative Assessment of Operational Collision Risk (Table 12-88, Impact 5: Collision Risk)	Tier 3 <ul style="list-style-type: none"> Dogger Bank C Sofia East Anglia One North East Anglia Three East Anglia Two Hornsea Project Three – revised Inch Cape Norfolk Boreas Norfolk Vanguard Hornsea Project Four 		Negligible Adverse to Minor Adverse (Gannet) Minor Adverse to Moderate Adverse (Kittiwake) Minor Adverse (Lesser Black-backed Gull) Minor Adverse (Herring Gull) Minor Adverse to Moderate Adverse (Great Black-backed Gull)
	Impact 12 Cumulative Assessment of Operational Collision Risk and Displacement (Table 12-88, Impact 6: Combined Operational Collision Risk and Displacement)	Tier 4 <ul style="list-style-type: none"> Berwick Bank Sheringham and Dudgeon Extension Projects Rampion 2 ForthWind Offshore Wind Demonstration Project - phase 1 North Falls Five Estuaries Outer Dowsing Dogger Bank D Tier 5 – N/A Tier 6 – N/A Tier 7 – N/A		Negligible Adverse to Minor Adverse (Gannet)

2.6 Chapter 13 Commercial Fisheries [APP-117]

Table 2-8 Schemes, plans and activities screened into the CEA for Chapter 13 Commercial Fisheries [APP-117].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 13-43, Table 13-44, Table 13-46, Table 13-47, Table 13-48, Table 13-49, Table 13-50, Table 13-51, Table 13-52, Table 13-53, Table 13-55, section 13.8.1, section 13.8.2	Construction	Tier 1 <ul style="list-style-type: none"> East Inshore, North East Inshore, East Offshore and North East Offshore Marine Plans Viking Link Interconnector MCZs: including Cromer Shoal Chalk Beds, Markham's Triangle, Holderness Inshore and Holderness Offshore. No Take Zone (NTZ): Flamborough Head SPAs: including the Wash, North Norfolk Coast, Greater Wash and Humber Estuary. SACs: including Dogger Bank SAC, North Norfolk Coast, The Wash and North Norfolk Coast, Haisborough, Hammond and Winterton, Inner Dowsing, Race Bank and North Ridge, North Norfolk Sandbanks and Saturn Reef, and Southern North Sea. Tier 2 <ul style="list-style-type: none"> Dogger Bank A Dogger Bank B Sofia Tier 3 <ul style="list-style-type: none"> Sofia (export cable only) Dogger Bank C (export cable only) Hornsea Project Four Tier 4 <ul style="list-style-type: none"> Northern Endurance Northern Endurance pipeline Tier 5 <ul style="list-style-type: none"> Hornsea Project Four (export cable only) Hornsea Project Three (HOW03) Tier 6 <ul style="list-style-type: none"> Dogger Bank D (export cable only) Eastern Green Link 2 (EGL2) Eastern Green Link 3* (EGL3) Eastern Green Link 4* (EGL4) 	<ul style="list-style-type: none"> A Moderate Adverse effect from loss of and / or reduced access to fishing grounds is predicted on the inshore static gear and dredge vessels receptor groups as a result of construction of the Offshore Export Cable Corridor. In order to mitigate this effect on the inshore static gear and dredge vessels, and the Minor Adverse effect on other receptor groups, the Projects would explore options to encourage co-existence between receptor groups and construction vessels and / or activities to further mitigate the of loss or restricted access to fishing ground in light of restrictions within the Dogger Bank Special Area of Conservation (SAC). Such measures may include disruption payments in accordance with Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) guidance and cooperation agreements. Additional mitigation measures may also include discussions to ascertain whether there are periods of time and /or particular locations during construction when it would be safe for fishing to occur. These additional mitigation measures above are included in the Outline Fisheries Liaison and Coexistence Plan (Revision 4) [document reference 8.28], which is included as an embedded mitigation measure. The significance of residual effect is also reliant on the implementation of the embedded mitigation measures provided in Table 13-3 of Chapter 13. 	
	Impact 1: Loss or Restricted Access to Fishing Grounds			Minor Adverse (inshore static fleet) Minor Adverse (UK dredgers) Negligible Adverse to Minor Adverse (all other receptors, Table 13-46 of Chapter 13)
	Impact 2: Displacement Leading to Gear Conflict and Increased Pressure on Adjacent Fishing Grounds			Minor Adverse (inshore static fleet) Moderate Adverse (UK dredgers) Negligible Adverse to Minor Adverse (all other receptors, Table 13-47 of Chapter 13)
	Impact 3: Increased Steaming Times			Negligible Adverse to Minor Adverse.
	Impact 4: Loss or Damage to Fishing Gear Due to Snagging			No potential for cumulative effects.
	Impact 5: Supply Chain Opportunities for Local Fishing Vessels			No potential for cumulative effects.
	Impact 6: Potential Impacts on Commercially Important Fish and Shellfish Resources			Negligible Adverse (otter trawlers, pelagic trawlers, offshore static gear and demersal trawlers and seines) Minor Adverse (dredgers, intertidal netters and inshore static gear fishers)
	Impact 7: Navigational Safety			No potential for cumulative effects.
	Operation			
	Impact 1: Loss or Restricted Access to Fishing Grounds			Minor Adverse (intertidal netters and inshore static gear fishers) Negligible Adverse (otter trawlers, pelagic trawlers and offshore static gear fishers) Minor Adverse (UK dredgers)
	Impact 2: Displacement Leading to Gear Conflict and Increased Pressure on Adjacent Fishing Grounds			Minor Adverse (intertidal netters and inshore static gear fishers) Negligible Adverse (otter trawlers, pelagic trawlers and offshore static gear fishers)

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
		Tier 7 <ul style="list-style-type: none">CCS North Sea Leasing Round SNS Area 1 - Licences CS020 & CS025CCS North Sea Leasing Round SNS Area 3 - Licence CS028CCS North Sea Leasing Round SNS Area 5CCS North Sea Leasing Round: SNS Area 6CCS North Sea Leasing Round: SNS Area 7		Minor Adverse (UK dredgers)
	Impact 3: Increased Steaming Times			Negligible Adverse
	Impact 4: Loss or Damage to Fishing Gear Due to Snagging			Minor Adverse (demersal trawls and seines, otter trawlers and dredgers) Negligible Adverse (all other receptors)
	Impact 5: Supply Chain Opportunities for Local Fishing Vessels			No potential for cumulative effects.
	Impact 6: Potential Impacts on Commercially Important Fish and Shellfish Resources			Minor Adverse (dredgers, intertidal netters and inshore static gear fishers) Minor Adverse (dredgers, intertidal netters and inshore static gear fishers) Negligible Adverse (all other receptors)
	Impact 7: Navigational Safety			Minor Adverse (Tier 1 and 2) Negligible Adverse (Tier 3 or higher)

* Cable route not yet finalised.

2.7 Chapter 14 Shipping and Navigation [APP-121]

Table 2-9 Schemes, plans and activities screened into the CEA for Chapter 14 Shipping and Navigation [APP-121].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 14-28	Construction	Tier 1 <ul style="list-style-type: none"> Dogger Bank C Hornsea Project Three Tier 2 <ul style="list-style-type: none"> Hornsea Project Four Tier 3 <ul style="list-style-type: none"> Dogger Bank D Outer Dowsing Tier 4 - NA Tier 5 - NA Tier 6 - NA Tier 7- NA	<ul style="list-style-type: none"> The significance of residual effect is reliant on the implementation of the embedded mitigation measures provided in Table 14-3 of Chapter 14. 	
Table 14-29	Impact 1: Vessel displacement and increased vessel to vessel collision risk between third-party vessels			Tolerable with Mitigation¹ (not significant)
section 14.8.3	Impact 2: Increased vessel to vessel collision risk between a third-party vessel and a Project vessel			Tolerable with Mitigation¹ (not significant)
section 14.8.4				
section 14.8.5				
section 14.8.6				
	Operation			
	Impact 1: Vessel displacement and increased vessel to vessel collision risk between third-party vessels			Tolerable with Mitigation¹ (not significant)
	Impact 2: Increased vessel to vessel collision risk between a third-party vessel and a Project vessel			Tolerable with Mitigation¹ (not significant)
	Impact 3: Creation of vessel to structure allision risk			Broadly Acceptable.
	Impact 4: Reduction of under-keel clearance due to cable protection			No potential for cumulative effects.
	Impact 5: Anchor interaction with sub-sea cables			No potential for cumulative effects.
	Impact 6: Reduction of emergency response capability (including SAR access)			Tolerable with Mitigation¹ (not significant)

¹ 'Tolerable with Mitigation' in this context refers to the embedded mitigation measures detailed in Table 14-3 of Chapter 14.

2.8 Chapter 15 Aviation and Radar [APP-125]

Table 2-10 Schemes, plans and activities screened into the CEA for Chapter 15 Aviation and Radar [APP-125].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 15-9, Table 9-10, section 15.8.3	Construction	Tier 1 – N/A	<ul style="list-style-type: none">All offshore wind farms must have any necessary radar mitigations in place before becoming operational, and any potential radar impacts from DBS West would be similarly mitigated. This requirement is captured in the Draft DCO (Revision 7) [document reference 3.1].Through the use of embedded mitigation measures such as effective lighting, additional agreed mitigation plans, reliance on pilots who are required to avoid any obstacle by legislated minimum distances, and consideration of charted obstacles, the significance of the cumulative effect during the construction phase from the creation of an obstacle environment is considered to be Not Significant. A full detailed list of embedded mitigation measures are given in Table 15-3 of Chapter 15. Embedded mitigations and any agreed additional mitigations would be equally applicable in the operation phase.	
	Impact 1: Impacts on Staxton Wold PSR due to high construction vessels / cranes and partially complete structures	Tier 2 <ul style="list-style-type: none">Dogger Bank ADogger Bank BSofiaDogger Bank C		No potential for cumulative effects.
	Impact 2: Creation of an aviation obstacle environment	Tier 3 <ul style="list-style-type: none">Hornsea Project ThreeHornsea Project Four		Not Significant
	Impact 3: Increased air traffic in the area related to wind farm support activities			Not Significant
	Operation	Tier 4 - NA		
	Impact 1: Wind turbines causing permanent interference on Staxton Wold PSR	Tier 5 <ul style="list-style-type: none">Outer Dowsing		Not Significant
	Impact 2: Creation of an aviation obstacle environment	Tier 6 <ul style="list-style-type: none">Dogger Bank D		Not Significant
	Impact 3: Increased air traffic in the area related to wind farm support activities	Tier 7- NA		Not Significant

2.9 Chapter 16 Infrastructure and Other Users (Revision 3) [REP1-011]

Table 2-11 Schemes, plans and activities screened into the CEA for Chapter 16 Infrastructure and Other Users (Revision 3) [REP1-011].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 16-13, Table 16-14, section 16.7.3	Construction	Tier 1 - N/A	<ul style="list-style-type: none"> Section 16.7.3.1 refers to embedded mitigation measures listed in Chapter 15 Aviation and Radar [APP-125], including effective lighting, additional agreed mitigation plans, reliance on pilots who are required to avoid any obstacle by legislated minimum distances, and consideration of charted obstacles. As with the Projects, it is expected that the developers of these schemes would reach 	
	Impact 1: Potential interference with other wind farms (interference with construction activities, third party vessel traffic, and aviation routes for other wind farms)	Tier 2 <ul style="list-style-type: none"> Sofia Dogger Bank A Dogger Bank B Viking Link Interconnector 		Minor Adverse
	Impact 2: Potential interference with oil & gas and CCS operations including decommissioning activities	Tier 3 <ul style="list-style-type: none"> Dogger Bank C (export cable only) 		Minor Adverse

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 3: Physical impacts on subsea cables and pipelines	<ul style="list-style-type: none"> Hornsea Project Three Hornsea Project Four Tier 4 - N/A Tier 5 - N/A Tier 6 <ul style="list-style-type: none"> Dogger Bank D (export cable only) Northern Endurance CCS CCS North Sea Leasing Round SNS Area 1 - Licence CS020 CCS North Sea Leasing Round SNS Area 1 – CS025 CCS North Sea Leasing Round SNS Area 3 – Licence CS028 Eastern Green Link 2 (EGL2) Tier 7 <ul style="list-style-type: none"> Continental Link* Eastern Green Link 3* (EGL3) Eastern Green Link 4* (EGL4) National Grid HND Bootstrap* 	agreements with any other affected developers (including proximity and crossing agreements) such that cumulative effects remain Minor Adverse significance during all stages of the projects.	Minor Adverse
	Impact 4: Impacts on disposal sites and aggregate extraction sites			Minor Adverse
	Impact 5: Impacts on MOD Activities			No potential for cumulative effects.
	Operation			
	Impact 1: Potential interference with other wind farms (interference with construction activities, third party vessel traffic, and aviation routes for other wind farms)			Minor Adverse
	Impact 2: Potential interference with oil & gas and CCS operations including decommissioning activities			Minor Adverse
	Impact 3: Physical impacts on subsea cables and pipelines			Minor Adverse
	Impact 4: Impacts on disposal sites and aggregate extraction sites			Minor Adverse
	Impact 5: Impacts on MOD Activities			No potential for cumulative effects.

* Cable route not yet finalised.

2.10 Chapter 17 Offshore Archaeology and Cultural Heritage [APP-134]

Table 2-12 Schemes, plans and activities screened into the CEA for Chapter 17 Offshore Archaeology and Cultural Heritage [APP-134].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 17-20, Table 17-21, section 17.8.3	Construction	Tier 1 <ul style="list-style-type: none"> Hornsea Project Four export cable¹ Tier 2 <ul style="list-style-type: none"> Dogger Bank A Dogger Bank A export cable Dogger Bank B Dogger Bank B export cable Tier 3	<ul style="list-style-type: none"> A commitment to the application of industry standard mitigation for both Projects, is set out in the Outline Written Scheme of Investigation (WSI) (Offshore) [APP-246] for the Projects and Hornsea Project Four. 	
	Impact 1 Direct (physical) impact to known heritage assets			No potential for cumulative effects.
	Impact 2 Direct impact to potential heritage assets			Minor Adverse
	Impact 3 Indirect impact to heritage assets from changes to physical processes			No significant cumulative effects are predicted to occur

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
		<ul style="list-style-type: none"> Hornsea Project Four Northern Endurance CCS 		
	Impact 4 Changes to the setting of heritage assets	Tier 4 - N/A		No potential for cumulative effects.
	Operation	Tier 5 - N/A		
	Impact 1 Direct (physical) impact to known heritage assets	Tier 6 - N/A		No potential for cumulative effects.
	Impact 2 Direct impact to potential heritage assets	Tier 7 <ul style="list-style-type: none"> CCS North Sea Leasing Round SNS Area 1 - Licences CS020 & CS025 CCS North Sea Leasing Round SNS Area 3 - Licence CS028 Eastern Green Link 3* (EGL3) Eastern Green Link 4* (EGL4) National Grid HND Bootstrap** Aminth Energy Interconnector* Continental Link* 		Minor Adverse
	Impact 3 Indirect impact to heritage assets from changes to physical processes			No potential for cumulative effects.
	Impact 4 Changes to the setting of heritage assets			No potential for cumulative effects.

¹ Hornsea Project Fours array area are outwith the ZOI and therefore not screened into this CEA.

*Current routes detailed publicly are for illustrative purposes only, but if accurate are projected to cross the Projects Offshore Export Cable Corridor

**Cable route not yet finalised

2.11 Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019]

Table 2-13 Schemes, plans and activities screened into the CEA for Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 18-15, Table 18-16, Section 18.8	Construction	Tier 1 <ul style="list-style-type: none"> Dogger Bank A & B Offshore Wind Farm A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Tickton Bridge Solar Hornsea 4 Offshore Wind Farm Ferry Road Carr Plantation 	<ul style="list-style-type: none"> The CEA for Terrestrial Ecology and Ornithology has only identified potential Moderate Adverse cumulative effects on breeding birds during the construction phase of the Projects and Hornsea 4 Offshore Windfarm, Birkhill Wood National Grid Substation, Scotland England Green Link 2, A164 and Jock's Lodge Improvement Scheme. The mitigation being proposed includes improved communication with neighbouring schemes as per the Outline Code of Construction Practice (OCocP) (Revision 4) [document reference 8.9] to ensure that the construction programme 	
	Impact 1: Construction Disturbance to Statutory Designated Nature Conservation Sites.			No cumulative effects expected.
	Impact 2: Construction Disturbance to Non-Statutory Designated Nature Conservation Sites.			No cumulative effects expected.
	Impact 3: Permanent and Temporary Loss / Fragmentation of Habitats	Tier 2 <ul style="list-style-type: none"> Scotland England Green Link 2 (SEGL2) Proposed Birkhill Wood National Grid Substation North Humber to High Marnham grid upgrade 		No cumulative effects expected.
	Impact 4: Potential Mortality, Harm or Disturbance to GCN, or Destruction, Damage, or Disturbance to GCN Habitat			No cumulative effects expected.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 5: Potential Mortality, Harm or Disturbance to Badger, or Destruction, Damage, or Disturbance to Badger Habitat	<ul style="list-style-type: none"> Creyke Beck Substation Extension JBM Peartree Hill Solar Farm Tier 3 <ul style="list-style-type: none"> Whitehall 	reduces temporal and spatial impacts on breeding birds to minimise localised displacement and disturbance.	No cumulative effects expected.
	Impact 6: Potential Mortality, Harm or Disturbance to Roosting Bats, or Destruction, Damage, or Disturbance to Roosting Bat Habitat			No cumulative effects expected.
	Impact 7: Potential Mortality, Harm or Disturbance to Foraging and Commuting Bats, or Destruction, Damage, or Disturbance to Foraging and Commuting Bat Habitat			No cumulative effects expected.
	Impact 8: Potential Mortality, Harm or Disturbance to Breeding Birds, or Destruction, Damage, or Disturbance to Breeding Bird Habitat			Moderate Adverse
	Impact 9: Potential Mortality, Harm or Disturbance to Over-wintering Birds, or Destruction, Damage, or Disturbance to Over-wintering Bird Habitat			No cumulative effects expected.
	Impact 10: Potential Mortality, Harm or Disturbance to Otter, or Destruction, Damage, or Disturbance to Otter Habitat			No cumulative effects expected.
	Impact 11: Potential mortality or harm or disturbance to other notable species			No cumulative effects expected.
	Impact 12: Potential Mortality, Harm or Disturbance to Reptile, or Destruction, Damage, or Disturbance to Reptile Habitat			No cumulative effects expected.
	Impact 13: Potential Mortality, Harm or Disturbance to Water Vole, or Destruction, Damage, or Disturbance to Water Vole Habitat			No cumulative effects expected.
	Impact 14: Spread of Non-native Species			No cumulative effects expected.
	Operation			
	Impact 15: Disturbance to Habitats and Species from Maintenance Activities			No cumulative effects expected.
	Impact 16: Disturbance to Species from Artificial Lighting			No cumulative effects expected.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 17: Permanent habitat loss			No cumulative effects expected.
	Impact 18 : The Effect of Permanent Habitat Loss on Species			No cumulative effects expected.

2.12 Chapter 19 Geology and Land Quality [APP-158]

Table 2-14 Schemes, plans and activities screened into the CEA for Chapter 19 Geology and Land Quality [APP-158].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 19-13, Table 19-14	Construction	Tier 1 <ul style="list-style-type: none"> Tickton Bridge Solar – solar farm development A164 And Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Grange Farm Solar Tickton Bridge Solar Skipsea Caravan Park Manor Farm Dunnington – erection of a 4.2MW wind turbine Dogger Bank A and B – offshore windfarm Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> JBM Peartree Hill Solar Farm Creyke Beck Substation Extension Proposed Birkhill Wood National Grid Substation Tier 3 <ul style="list-style-type: none"> Strawberry Fields - reorganisation and expansion of existing holiday park Carr Lane Tickton – solar farm development Heron Lakes – expansion of existing holiday park Tickton Bridge POC Mast Longcroft Lower – residential housing development White Hall – solar farm development Proposed Beverley Household Recycling Centre¹ 	<ul style="list-style-type: none"> The CEA for geology and land quality has not identified any schemes where significant cumulative effects could arise, therefore no mitigation has been proposed. 	
	Impact 1: Exposure to contaminated soils (human health)			No potential for significant cumulative effects.
	Impact 2: Impacts on groundwater			No potential for significant cumulative effects.
	Impact 3: Impacts on surface waters			No potential for significant cumulative effects.
	Impact 4: Sterilisation of future mineral resources			No potential for significant cumulative effects.
	Impact 5: Built environment			No potential for significant cumulative effects.
	Impact 6: Impacts to Designated geological sites			No potential for significant cumulative effects.
	Impact 7: Impacts on agricultural land			No potential for significant cumulative effects.
	Operation			
	Impact 8: Exposure to contaminated soils (human health)			No potential for significant cumulative effects.
	Impact 9: Impact on groundwater and surface water			No potential for significant cumulative effects.
	Impact 10: Sterilisation of mineral resources			No potential for significant cumulative effects.
	Impact 11: Built environment (users of existing buildings)			No potential for significant cumulative effects.
	Impact 12: Impacts to designated geological sites			No potential for significant cumulative effects.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 13: Impacts on agricultural land			No potential for significant cumulative effects.

¹The Applicants are aware that the Proposed Beverley Household Recycling Centre application has been refused however kept in CEA longlist due to professional judgement and stakeholder request.

2.13 Chapter 20 Flood Risk and Hydrology (Revision 2) [REP1-014]

Table 2-15 Schemes, plans and activities screened into the CEA for Chapter 20 Flood Risk and Hydrology (Revision 2) [REP1-014].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 20-24, Table 20-25	Construction	Tier 1 <ul style="list-style-type: none"> Barns Way Land Land South of Connaught Westwood Park A164 And Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Dogger Bank A Dogger Bank B Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> Creyke Beck Substation Extension Proposed Birkhill Wood National Grid Substation Tier 3 <ul style="list-style-type: none"> Danepark Road Foss Hill Longcroft Lower Skipsea Caravan Park Carr Lane Tickton 	<ul style="list-style-type: none"> The OCoCP (Revision 4) [document reference 8.9] outlines the control measures and standards that will be implemented to control the impacts on the environment. This includes measures to manage runoff, soils and sediment and the storage and use of potential contaminants. Measures specific to Flood Risk and Hydrology that will be secured in the OCoCP (Revision 4) [document reference 8.9] and commitments within the Commitments Register (Revision 2) [REP2-025] A detailed Sustainable Drainage Systems (SuDS) design and Flood Risk Assessment (FRA) have also been undertaken, and a full groundwater risk assessment must be undertaken and approved by the local planning authority. 	
	Impact 1: Direct disturbance of surface water bodies			Significant cumulative effects are not anticipated.
	Impact 2: Increased sediment supply			Significant cumulative effects are not anticipated.
	Impact 3: Accidental release of contaminants to surface and groundwaters			Significant cumulative effects are not anticipated.
	Impact 4: Changes to surface and groundwater flows and flood risk			Significant cumulative effects are not anticipated.
	Operation			
	Impact 1: Accidental release of contaminants to surface and groundwaters			Significant cumulative effects are not anticipated.
	Impact 2: Changes to surface and groundwater flows and flood risk			Significant cumulative effects are not anticipated.

2.14 Chapter 21 Land Use (Revision 3) [REP2-022]

Table 2-16 Schemes, plans and activities screened into the CEA for Chapter 21 Land Use (Revision 3) [REP2-022].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 21-16, Table 21-17,	Construction	Tier 1 <ul style="list-style-type: none"> A164 and Jocks Lodge Improvement Scheme 	<ul style="list-style-type: none"> In relation to Public Right of Way (PRoW), the construction of Hornsea 4 will result in the permanent diversion of Rowley Bridleway No.13. Should the permanent 	
	Impact 1: Agricultural Drainage			Significant cumulative effects are not anticipated.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
section 21.8.1	Impact 2: Temporary Loss of Agricultural Land	<ul style="list-style-type: none"> Creyke Beck Solar Farm Dogger Bank A and B Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> Proposed Birkhill Wood National Grid Substation JBM Peartree Hill Solar Farm Tier 3 <ul style="list-style-type: none"> Strawberry Fields - reorganisation and expansion of existing holiday park Proposed Beverley Household Recycling Centre¹ 	<div>diversion of Rowley Bridleway No.13 be completed prior to the commencement of construction for the Projects, the mitigation measures identified within Appendix C Outline PRow Management Plan (Revision 2) of the OCoCP (Revision 4) [document reference 8.9] will be applied.</div> <ul style="list-style-type: none"> It may not be possible to reduce the significance of effect for temporary and/or permanent loss of agricultural land through the application of mitigation measures. Therefore, the significance of effect would remain significant. As with the Projects, there is the potential for landowners/occupiers to be impacted to varying extents by the loss of agricultural land. 	Potential for significant cumulative effects.
	Impact 3: Soil Degradation and Loss of Soil to Erosion			Significant cumulative effects are not anticipated.
	Impact 4: Impact to Agri-environment Schemes			Significant cumulative effects are not anticipated.
	Impact 5: Disruption to Existing Utilities			Significant cumulative effects are not anticipated.
	Impact 6: Disruption to users of Recreational Routes			Significant cumulative effects are not anticipated.
	Operation			
	Impact 1: Disruption to Field Drainage			Significant cumulative effects are not anticipated.
	Impact 2: Permanent Loss of Land for Agriculture			Potential for significant cumulative effects.
	Impact 3: Environmental Stewardship Schemes			Significant cumulative effects are not anticipated.
	Impact 4: Disruption to Existing Utilities			Significant cumulative effects are not anticipated.
	Impact 5: Disruption to users of Recreational Routes			Significant cumulative effects are not anticipated.
	Impact 6: Soil Heating			Significant cumulative effects are not anticipated.

¹ The Applicants are aware that the Proposed Beverley Household Recycling Centre application has been refused however kept in CEA longlist due to professional judgement and stakeholder request.

2.15 Chapter 22 Onshore Archaeology and Cultural Heritage (Revision 2) [AS-092]

Table 2-17 Schemes, plans and activities screened into the CEA for Chapter 22 Onshore Archaeology and Cultural Heritage (Revision 2) [AS-092].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 22-13, Table 22-14	Construction	Tier 1 <ul style="list-style-type: none"> Dogger Bank A and B A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Tickton Bridge Solar Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> JBM Peartree Hill Solar Farm 	<ul style="list-style-type: none"> As part of the embedded mitigation, the Projects have submitted an Outline Onshore WSI [APP-239] as part of the final DCO submission, outlining a commitment to undertake additional programmes of survey and evaluation post-consent to inform the archaeological mitigation requirements. The impact to archaeological resource will have been mitigated through appropriate archaeological mitigation. Archaeological 	
	Impact 1: Direct Physical Impact on Designated Heritage Assets			No potential for significant cumulative effects.
	Impact 2: Direct Physical Impact on Non-designated Heritage Assets			No potential for significant cumulative effects.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impacts 3 and 4: Indirect Physical Impact on Designated and Non-designated Heritage Assets	<ul style="list-style-type: none"> Proposed Birkhill Wood National Grid Substation Scotland England Green Link 2 (SEGL2) North Humber to High Marnham Grid Upgrade Creyke Beck Substation Extension Tier 3 <ul style="list-style-type: none"> Strawberry Fields - reorganisation and expansion of existing holiday park Proposed Beverley Household Recycling Centre¹ 	mitigation is envisaged to comprise a combination of the following recognised standard approaches: <ul style="list-style-type: none"> Further advance and enacting of preservation in situ options and requirements (e.g. avoidance/micro-siting/HDD etc., where possible); Archaeological excavation: including subsequent post-excavation assessment, and analysis, publication and archiving; Archaeological monitoring/watching brief: including subsequent post-excavation assessment, and analysis, publication and archiving (where appropriate); and Earthwork condition surveys: including subsequent reporting and archiving (followed by backfilling and reinstatement, where required on a case-by-case basis). 	No potential for significant cumulative effects.
	Impacts 5 and 6: Temporary Change to the Setting of Heritage Assets Which Could Affect Their Heritage Significance			No potential for significant cumulative effects.
	Operation			
	Impacts 7 and 8: Permanent Change to the Setting of Heritage Assets Which Could Affect Their Heritage Significance			No potential for significant cumulative effects.

¹ The Applicants are aware that the Proposed Beverley Household Recycling Centre application has been refused however kept in CEA longlist due to professional judgement and stakeholder request.

2.16 Chapter 23 Landscape and Visual Impact Assessment [APP-192]

Table 2-18 Schemes, plans and activities screened into the CEA for Chapter 23 Landscape and Visual Impact Assessment [APP-192].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 23-21, Table 23-22, section 23.8	Construction	Tier 1 <ul style="list-style-type: none"> Dogger Bank A and B A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> Creyke Beck Substation Extension North Humber to High Marnham Grid Upgrade Proposed Birkhill Wood National Grid Substation Tier 3	<ul style="list-style-type: none"> Proposed landscape planting around the Onshore Converter Stations would help reduce visual impacts over time. Landscape mitigation planting would be provided at both the proposed Hornsea 4 Substation and the Projects. As this planting matures, it would help reduce the visual impact of the Projects. Landscape mitigation planting would be provided at both the proposed Birkhill Wood National Grid Substation and the Onshore Converter Stations. As this planting matures, it would help reduce the visual impact of the projects. 	
	Impact 1 and Impact 4: Landscape and Visual Effects of Landfall			No potential for significant cumulative effects.
	Impact 2 and Impact 5: Landscape and Visual Effects of Onshore Export Cable Corridor - Subareas 2-4			No potential for significant cumulative effects.
	Impact 3: Landscape Effects of Onshore Converter Stations			Minor to Moderate Adverse (Onshore Substation Zone)
	Impact 6: Visual effects of Onshore Converter Stations - (Onshore Substation Zone) (Viewpoint 1: Butt Farm, Viewpoint 2: Copplesflat Lane, Bentley, Viewpoint 3: Beverley 20 near			Minor to Moderate Adverse (Onshore Substation Zone) .

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Broadgate, Viewpoint 4: Oriel Close, off Broadgate).	<ul style="list-style-type: none"> White Hall 		
	Operation			
	Impact 1 and Impact 2: Landscape Effects of Onshore Converter Stations -			Minor to Moderate Adverse (Onshore Substation Zone) (Onshore Substation Zone).
	Impact 3: Visual effects of Onshore Converter Stations (Onshore Substation Zone) (Viewpoint 1: Butt Farm, Viewpoint 2: Coppleflat Lane, Bentley, Viewpoint 3: Beverley 20 near Broadgate, Viewpoint 4: Oriel Close, off Broadgate, Viewpoint 5: Walkington, Viewpoint 6: Footpath, Risby, Viewpoint 7: Woodmansey, Viewpoint 8: Beverley Minster Tower).			Minor to Moderate Adverse (Onshore Substation Zone) (Viewpoint 1: Butt Farm, Viewpoint 2: Coppleflat Lane, Bentley, Viewpoint 3: Beverley 20 near Broadgate).

2.17 Chapter 24 Traffic and Transport [APP-195]

Table 2-19 Schemes, plans and activities screened into the CEA for Chapter 24 Traffic and Transport [APP-195].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 24-37, Table 24-38, section 24.8.1	Construction	Tier 1 <ul style="list-style-type: none"> A164 and Jocks Lodge Improvement Scheme (JLJIS) Heron Lakes Main Road Routh East Riding OfYorkshire HU17 9SL Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> Creyke Beck Substation Extension Proposed Birkhill Wood National Grid Substation Tier 3 <ul style="list-style-type: none"> Proposed Beverley Household Recycling Centre¹ 	<ul style="list-style-type: none"> The Outline Construction Traffic Management Plan (CTMP) (Revision 2) [AS-020] contains details of measures to control, monitor and enforce construction traffic movements and provides details of the mechanisms for managing the design of accesses and offsite highway works. The production of a final version of the CTMP and design of the highway accesses and offsite highway will be undertaken in consultation with the relevant highway authorities (East Riding ofYorkshire Council, Hull City Council and National Highways) and is secured via requirements in the Draft DCO (Revision 7) [document reference 3.1]. 	
	Impact 1: Severance			Minor Adverse
	Impact 2: Amenity			Minor Adverse
	Impact 3: Road Safety			Minor Adverse
	Impact 4: Driver Delay (Capacity)			No potential for cumulative effects
	Impact 5: Driver Delay (Highway Geometry)			No potential for cumulative effects
	Impact 6: Driver Delay (Road Closures)			No potential for cumulative effects

¹ The Applicants are aware that the Proposed Beverley Household Recycling Centre application has been refused however kept in CEA longlist due to professional judgement and stakeholder request.

No significant traffic and transport effects are anticipated during the operational phase and as agreed with the relevant highway authorities, no operational scenarios have been assessed within this traffic and transport impact assessment.

2.18 Chapter 25 Noise (Revision 2) [REP1-019]

Table 2-20 Schemes, plans and activities screened into the CEA for Chapter 25 Noise (Revision 2) [REP1-019].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 25-24, Table 25-25, section 25.8	Construction	Tier 1 <ul style="list-style-type: none"> A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Tickton Bridge Solar Heron Lakes Hornsea 4 Offshore Wind Farm Tier 2 <ul style="list-style-type: none"> Creyke Beck Substation Extension Proposed Birkhill Wood National Grid Substation JBM Peartree Hill Solar Farm Tier 3 <ul style="list-style-type: none"> Proposed Beverley Household Recycling Centre¹ Continental Link Multi-purpose Interconnector 	<ul style="list-style-type: none"> The mitigation being proposed includes noise screening, programming of works and good communication and engagement with stakeholders, as per the OCoCP (Revision 4) [document reference 8.9]. 	
	Impact 1: Potential interaction with construction noise at Landfall Zone			No cumulative effects are expected at NSRs in proximity of the landfall.
	Impact 2: Potential interaction with construction noise along the Onshore Export Cable Corridor			Minor Adverse
	Impact 3: Potential interaction with construction noise at Onshore Converter Station(s).			Minor Adverse
	Impact 4: Construction Road Traffic Noise			Minor Adverse
	Impact 5: Construction Vibration			Minor Adverse
	Operation			
	Impact 6: Potential interaction with operational noise at Onshore Converter Station(s) location			Minor Adverse

¹ The Applicants are aware that the Proposed Beverley Household Recycling Centre application has been refused however kept in CEA longlist due to professional judgement and stakeholder request.

2.19 Chapter 26 Air Quality [APP-208]

Table 2-21 Schemes, plans and activities screened into the CEA for Chapter 26 Air Quality [APP-208].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 26-50, Table 26-51, section 26.7.1	Construction	Tier 1 <ul style="list-style-type: none"> A63 Castle Street Improvement Creyke Beck Solar Farm Hornsea Four Offshore Wind Farm A164 and Jocks Lodge Improvement Scheme Tickton Bridge Solar Barnes Way Land Land South of Connaught Tier 2 <ul style="list-style-type: none"> Proposed Birkhill Wood National Grid Substation 	<ul style="list-style-type: none"> No specific measures have been adopted to address the listed impacted. Section 26.7.1.2.1 of Chapter 26 Air Quality [APP-208] does however mention inter-project engagement will seek to avoid temporal overlap. 	
	Impact 1: Construction Dust and Fine Particulate Matter			Not significant
	Impact 2: NRMM Emissions			It is unlikely that there would be a significant cumulative impact associated with construction phase NRMM.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
		<ul style="list-style-type: none"> JBM Peartree Hill Solar Farm Creyke Beck Substation Extension 		
	Impact 3: Construction Phase Road Traffic Emissions	Tier 3 <ul style="list-style-type: none"> Strawberry Fields Carr Lane Tickton Croxby Hall Farm Snuff Mill Lane Solar Danepark Road 		Not significant

Operational impacts were scoped out of the assessment, as detailed in section 26.3.1 for Chapter 26, therefore there would be no potential for operational impacts.

2.20 Chapter 27 Human Health [APP-214]

Table 2-22 Schemes, plans and activities screened into the CEA for Chapter 27 Human Health [APP-214].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 27-16, Table 27-17	Construction	Tier 1 <ul style="list-style-type: none"> Dogger Bank A and B Tickton Bridge POC Mast A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Tickton Bridge Solar Hornsea Four Offshore Wind Farm Ferry Road Carr Plantation Creyke Beck Substation Extension Tier 2 <ul style="list-style-type: none"> JBM Peartree Hill Solar Farm Scotland England Green Link 2 (SEGL2) Proposed Birkhill Wood National Grid Substation North Humber to High Marnham grid upgrade Tier 3 <ul style="list-style-type: none"> Carr Lane Tickton White Hall 	<ul style="list-style-type: none"> No additional mitigation measures are introduced in this chapter. Table 27-17 references topic specific chapters (e.g. Chapter 26 Air Quality [APP-208]) in reference to the relevant impact (e.g. Impact 3: Bio-Physical Environment: Air Quality (Section 27.6.1.3)). Chapters individually reference mitigation measures and are discussed in the appropriate Tables within this document, therefore the mitigation does not specifically apply to this chapter and will not be repeated within this Table. 	
	Impact 1: Health Related Behaviours: Physical Activity, Open Space and Leisure			No potential for cumulative effects
	Impact 2: Social Environment: Transport Modes, Access and Connections			Minor Adverse
	Impact 3: Bio-Physical Environment: Air Quality			Minor Adverse
	Impact 4: Bio-Physical Environment: Water			Cumulative effects are not anticipated.
	Impact 5: Bio-Physical Environment: Soil Contamination			Negligible Adverse
	Impact 6: Bio-Physical Environment: Noise Disturbance			Minor Adverse
	Impact 7: Economic Environment: Workforce Upskilling			Negligible Beneficial
	Impact 8: Economic Environment: Employment and Investment			Minor Beneficial and Minor Adverse.
	Operation			
	Impact 1: Bio-Physical Environment: Noise Disturbance			Minor Adverse

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 2: Bio-Physical Environment: Public Concern and Understanding of Electro-Magnetic Field Risks			Negligible Adverse
	Impact 3: Bio-Physical Environment: Climate Change			No potential for cumulative effects
	Impact 4: Economic Environment: Workforce Upskilling			Negligible Beneficial
	Impact 5: Economic Environment: Employment and Investment			Minor Beneficial and Minor Adverse .
	Impact 6: Wider Social Infrastructure and Resources			Moderate Beneficial and Minor Adverse .

2.21 Chapter 28 Socio-Economics [APP-217]

Table 2-23 Schemes, plans and activities screened into the CEA for Chapter 28 Socio-Economics [APP-217].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 28-82, Table 28-83, section 28.8.1	Construction	Tier 1 <ul style="list-style-type: none"> Dogger Bank A Dogger Bank B Hornsea 4 Offshore Wind Farm A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Ferry Road Carr Plantation Tickton Bridge Solar Tier 2 <ul style="list-style-type: none"> Dogger Bank D JBM Peartree Hill Solar Farm Scotland England Green Link 2 (SEGL2) Proposed Birkhill Wood National Grid Substation North Humber to High Marnham grid upgrade Creyke Beck Substation Extension 	<ul style="list-style-type: none"> The CEA for socio-economics has not identified any schemes where significant cumulative effects could arise, therefore no mitigation has been proposed. 	
	Impact 1: Economic Activity			Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.
	Impact 2: Employment			Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.
	Impact 3: Demographics			Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.
	Impact 4: Loss of, Disruption to or Pressure on Social Assets (Local Infrastructure)			Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.
	Impact 5: Disturbance to Social Infrastructure			No potential for cumulative effects.
	Operation			
	Impact 1: Economic Activity			Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
	Impact 2: Employment	Tier 3 <ul style="list-style-type: none"> Carr Lane Tickton White Hall 		Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.
	Impact 3: Demographics			Minor Beneficial for the Humber Region and Negligible Beneficial for the UK.
	Impact 5: Disturbance to Social Infrastructure			No potential for cumulative effects.

2.22 Chapter 29 Tourism and Recreation [APP-219]

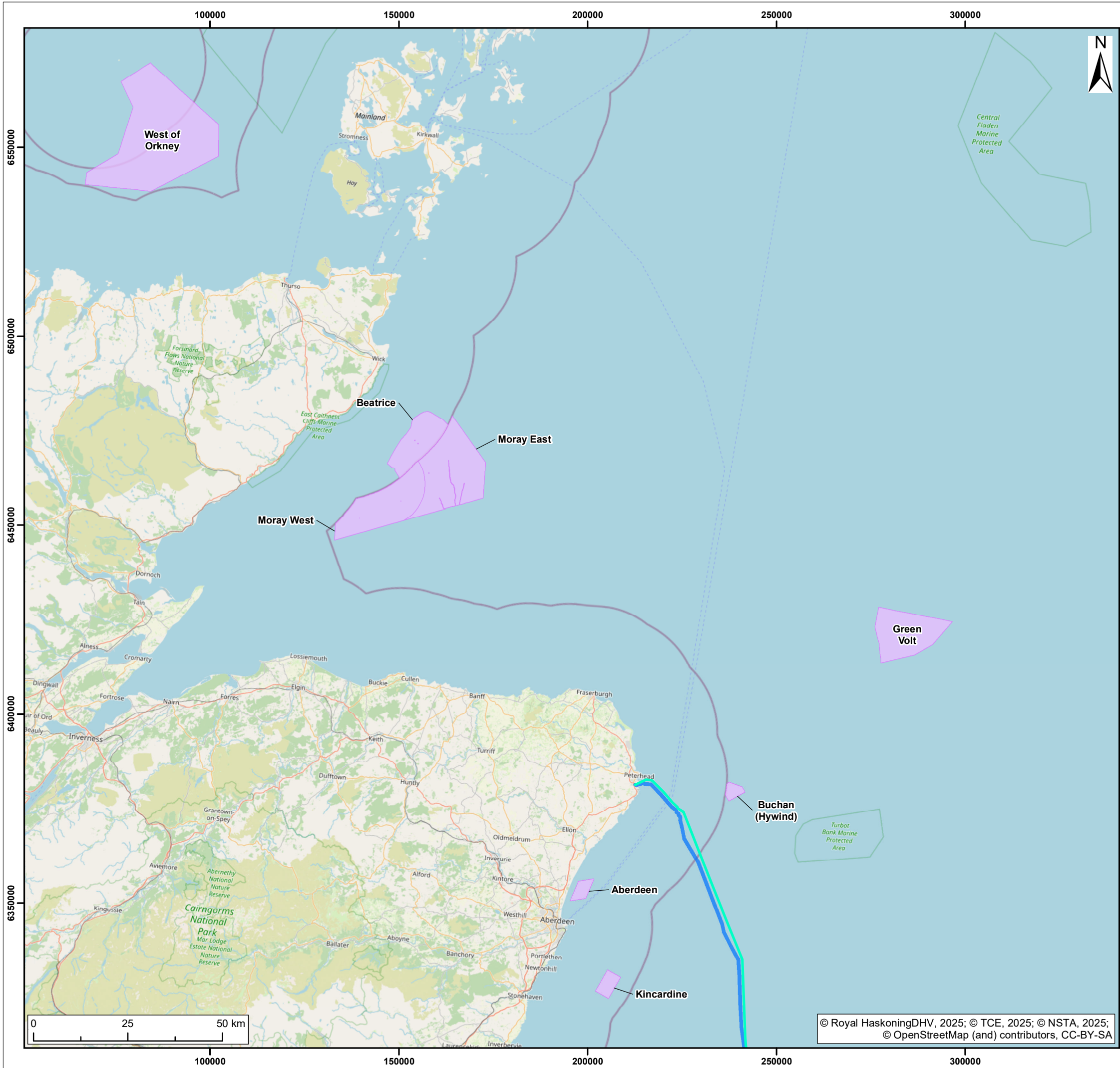
Table 2-24 Schemes, plans and activities screened into the CEA for Chapter 29 Tourism and Recreation [APP-219].

Location in chapter	Impact	Projects Considered	Proposed measures adopted as part of the DBS Projects relevant for this impact	Significance of residual effect
Table 29-39, Table 29-40 section 29.8.1	Construction	Tier 1 <ul style="list-style-type: none"> A164 and Jocks Lodge Improvement Scheme Creyke Beck Solar Farm Skipsea Caravan Park Minster Way Dogger Bank A Dogger Bank B Tier 2 <ul style="list-style-type: none"> Creyke Beck Substation Extension Proposed Birkhill Wood National Grid Substation Hornsea 4 Offshore Wind Farm Scotland England Green Link 2 (SEGL2) North Humber to High Marnham grid upgrade Tier 3 – N/A	<ul style="list-style-type: none"> The CEA for tourism and recreation has not identified any schemes where significant cumulative effects could arise, therefore no mitigation has been proposed. 	
	Impact 1: Tourism Economy			No significant cumulative effects have been identified.
	Impact 2: Tourism Assets			No significant cumulative effects have been identified.
	Impact 3 and Impact 4: Recreational Assets, including Marine Recreation			No significant cumulative effects have been identified.
	Operation			
	Impact 5: Tourism Economy			No significant cumulative effects have been identified.
	Impact 6: Tourism Assets			No significant cumulative effects have been identified.
	Impact 7 and Impact 8: Recreational Assets, including Marine Recreation			No significant cumulative effects have been identified.

2.23 Chapter 30 Climate Change [APP-222]

12. As discussed in section 30.8.1 of Chapter 30 Climate Change [APP-222], *'the global atmosphere is the only receptor for the GHG assessment, and IEMA guidance (2022) states that the effects of GHG emissions from specific cumulative projects should therefore not be individually assessed, as there is no basis for selecting which projects to assess cumulatively over any other. The impacts considered by the GHG assessment are inherently cumulative, as all developments which emit, avoid, or sequester GHG emissions affect global atmospheric concentrations irrespective of their location. Thus, no specific cumulative assessment with other schemes was undertaken for the GHG assessment.'*
13. In relation to the Climate Change Resilience Assessment (CCRA), section 30.8.2 advises the only climate variable applicable for consideration for cumulative effects is surface water flooding. The cumulative effect assessment in relation to hydrology and flood risk is given in Table 2-15. The Table concludes that *'none of the identified schemes would result in significant cumulative effects of flooding. Therefore, the CCRA has not identified any schemes where significant cumulative effects could arise'*.

Appendix A – Offshore Cumulative Effects Assessment Figure



- Legend**
- Wind Farm
 - Eastern Green Link 3
 - Eastern Green Link 2

S3	P02	24/04/2025	Suitable for review & comment	SM	CC	RF
S2	P01	23/04/2025	Suitable for Information	SM	CC	RF
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

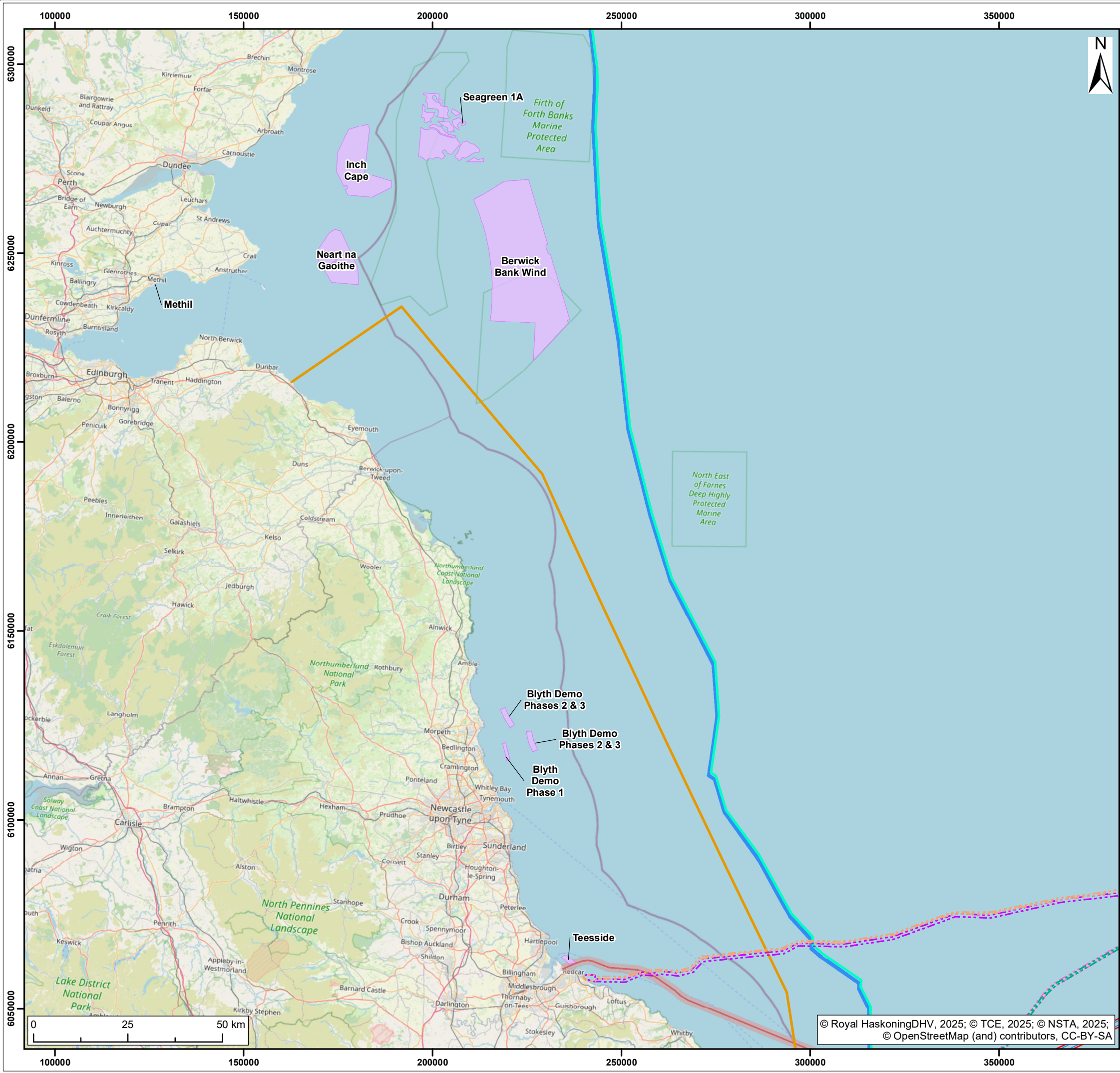
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Offshore Cumulative

Figure: A-1 Drawing No: PC2340-RHD-OF-ZZ-DR-Z-0591

Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,000,000

Project: Dogger Bank South Offshore Wind Farms Report: Deadline 4



- Legend**
- Offshore Development Area
 - Offshore Export Cable Corridor
 - Wind Farm
 - Eastern Green Link 4
 - Eastern Green Link 3
 - Eastern Green Link 2
 - Dogger Bank A export cable route
 - Dogger Bank B export cable route
 - Dogger Bank C export cable route
 - Teeside B (Sofia) export cable route
 - Nothern Endurance - Proposed Route
 - Nothern Endurance - Proposed Teesside Pipeline Corridor

S3	P02	24/04/2025	Suitable for review & comment	SM	CC	RF
S2	P01	23/04/2025	Suitable for Information	SM	CC	RF
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Offshore Cumulative

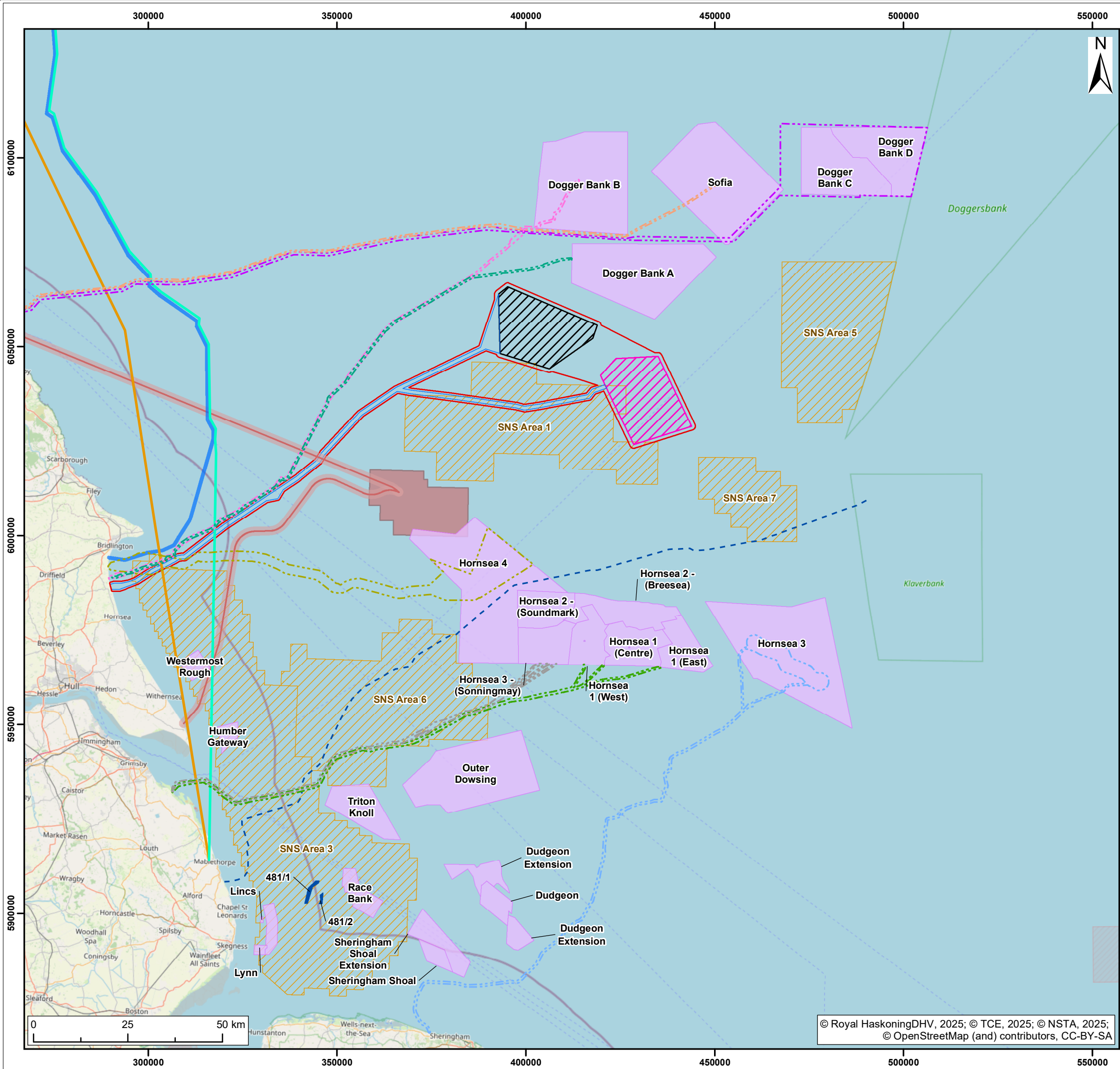
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Co-ordinate system: WGS 1984 UTM Zone 31N		Page Size: A3	Scale: 1:1,000,000
Project: Dogger Bank South Offshore Wind Farms		Report: Deadline 4	



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DBS
Offshore Wind



- Legend**
- Offshore Development Area
 - Offshore Export Cable Corridor
 - Wind Farm
 - Eastern Green Link 4
 - Eastern Green Link 3
 - Eastern Green Link 2
 - Dogger Bank A export cable route
 - Dogger Bank B export cable route
 - Dogger Bank C export cable route
 - Teeside B (Sofia) export cable route
 - Hornsea 1 export cable route
 - Hornsea 2 export cable route
 - Hornsea 3 export cable route
 - Hornsea 4 export cable route
 - Viking Link Interconnector
 - Nothern Endurance - Proposed Route
 - Nothern Endurance - Pipeline Corridor
 - Nothern Endurance - Geological Store
 - UK aggregate and dredging schemes
 - Carbon Capture and Storage
 - DBS East Array Area
 - DBS West Array Area

S3	P02	24/04/2025	Suitable for review & comment	SM	CC	RF
S2	P01	23/04/2025	Suitable for Information	SM	CC	RF
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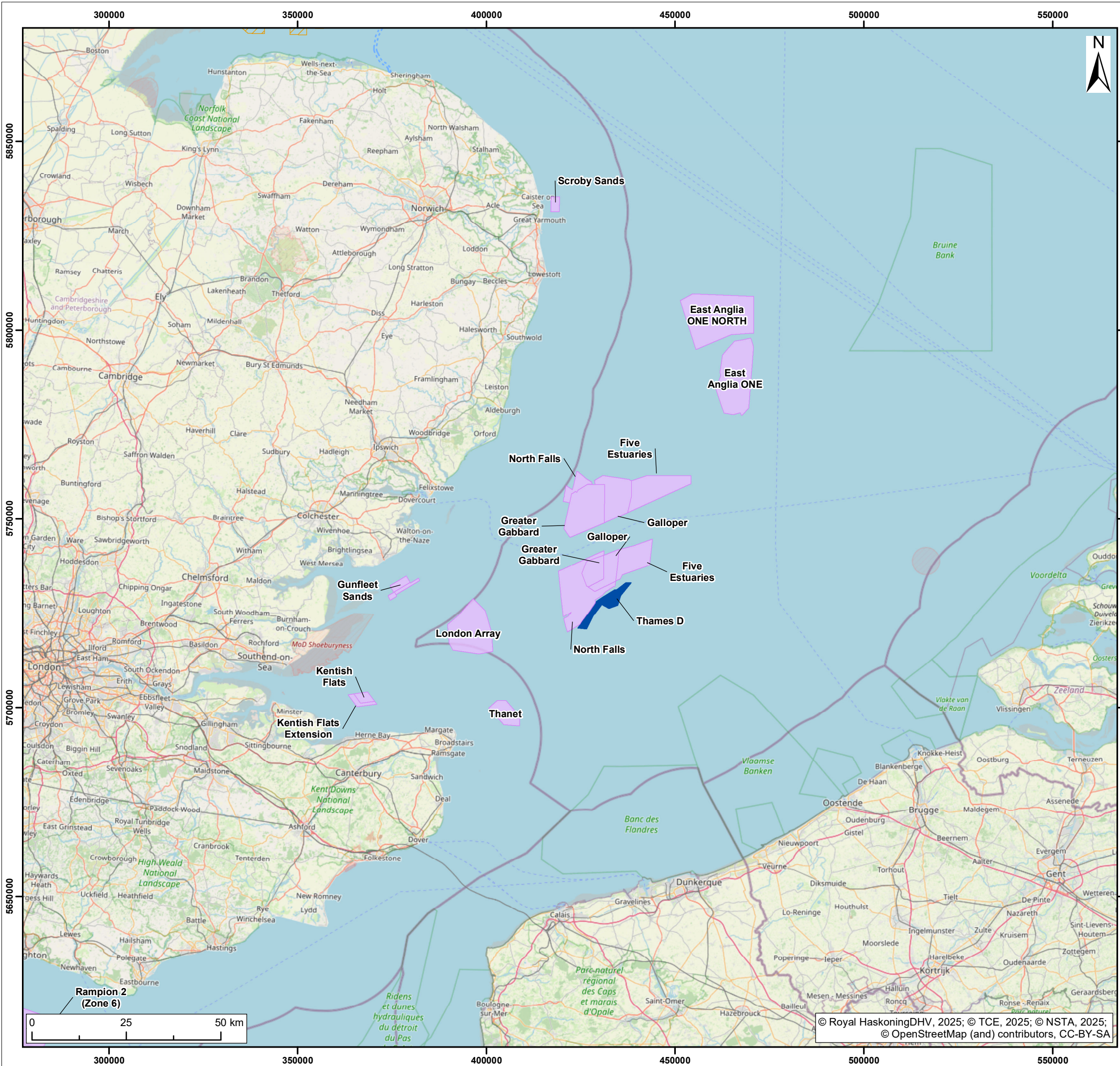
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Offshore Cumulative

Figure: A-1		Drawing No: PC2340-RHD-OF-ZZ-DR-Z-0591	
Co-ordinate system: WGS 1984 UTM Zone 31N		Page Size: A3	Scale: 1:1,000,000
Project: Dogger Bank South Offshore Wind Farms		Report: Deadline 4	



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- Legend**
- Wind Farm
 - Hornsea 3 export cable route
 - UK aggregate and dredging schemes
 - Carbon Capture and Storage

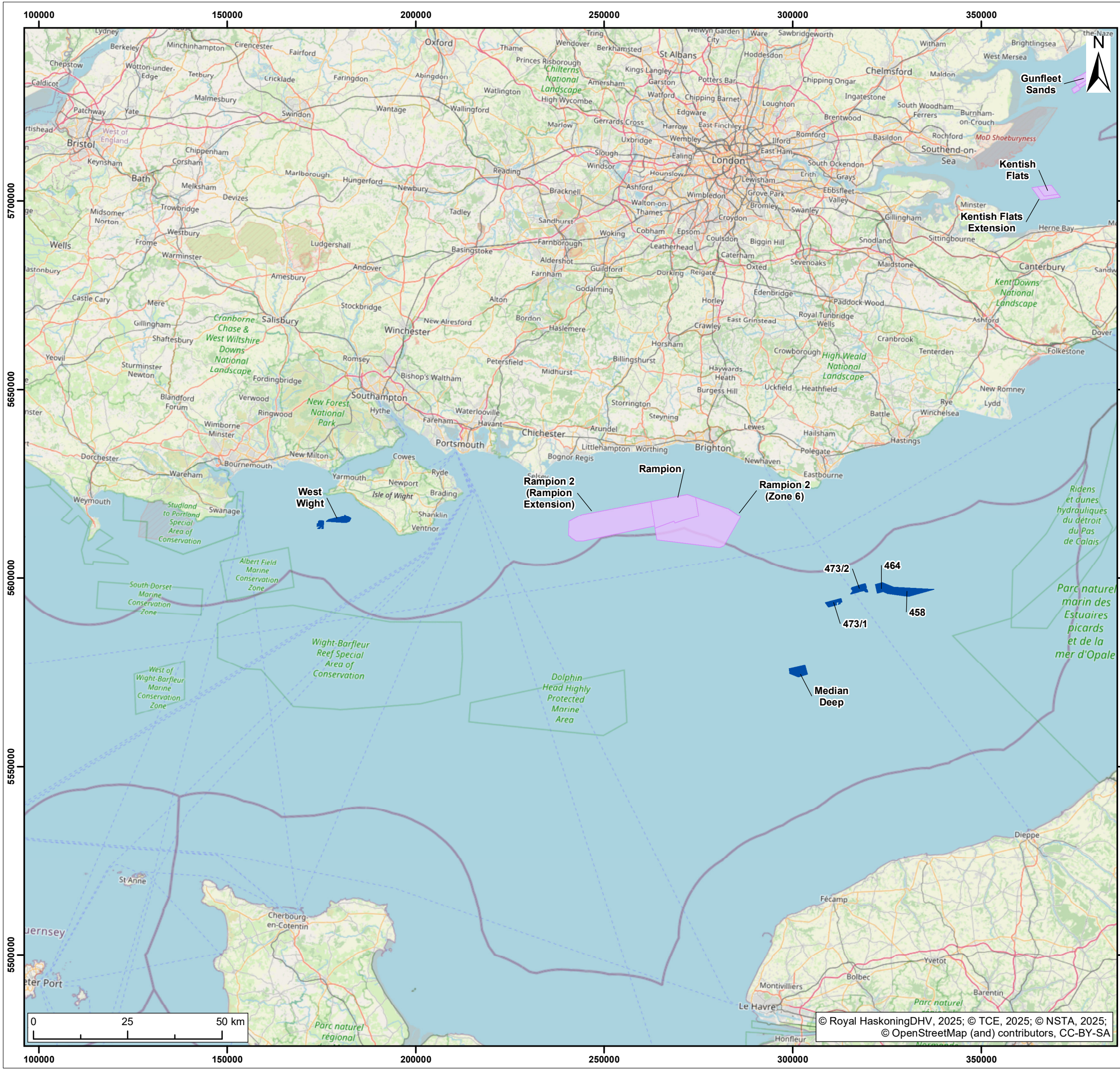
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S2	P01	23/04/2025	Suitable for Information	SM	CC	RF
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Offshore Cumulative

Figure: A-1	Drawing No: PC2340-RHD-OF-ZZ-DR-Z-0591		
Co-ordinate system: WGS 1984 UTM Zone 31N		Page Size: A3	Scale: 1:1,000,000
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- Legend**
- Wind Farm
 - UK aggregate and dredging schemes

S3	P02	24/04/2025	Suitable for review & comment	SM	CC	RF
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SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Offshore Cumulative

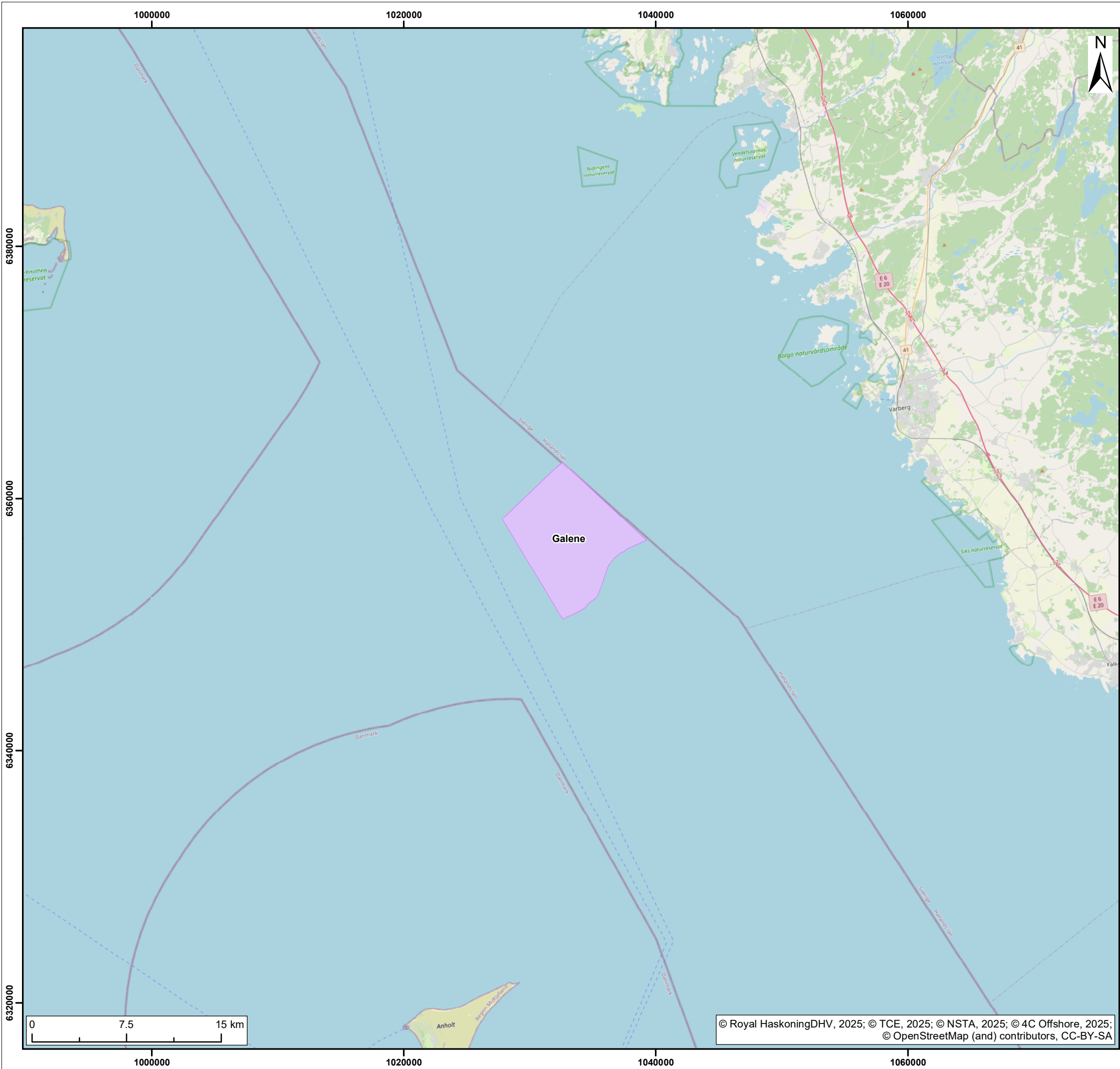
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Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,000,000

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Legend

Wind Farm

S3	P02	24/04/2025	Suitable for review & comment	SM	CC	RF
S2	P01	23/04/2025	Suitable for Information	SM	CC	RF
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Offshore Cumulative

Figure: A-1 Drawing No: PC2340-RHD-OF-ZZ-DR-Z-0591

Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:300,000

Project: Dogger Bank South Offshore Wind Farms Report: Deadline 4

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