RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Report to Inform Appropriate Assessment (RIAA) - Habitats Regulations Assessment

Volume 6

Appendix 1 - Project-Level Kittiwake Compensation Plan (Revision 7) (Clean)

Submission at Deadline 9

July 2025

Application Reference: 6.2.1

APFP Regulation: 5(2)(q)

Revision: 07

Unrestricted

Company:	**RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited**	Asset:	**Development**
Project:	**Dogger Bank South Offshore Wind Farms**	Sub Project / Package:	**Consents**
Document Title or Description:	Appendix 1 - Project-Level Kittiwake Compensation Plan (Revision 7) (Clean)		
Document Number:	005028820-07	Contractor Reference Number:	C01516_RWE_REP_D0294

Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	June 2024	Final for DCO Application	CEA	RWE	RWE
02	October 2024	Submission on 29 October 2024	CEA	RWE	RWE
03	November 2024	Submission on 22 November 2024	CEA	RWE	RWE
04	February 2025	Deadline 2 submission	CEA	RWE	RWE
05	April 2025	Deadline 4 submission	CEA	RWE	RWE

06	June 2025	Deadline 6 submission	CEA	RWE	RWE
07	July 2025	Deadline 9 submission	CEA	RWE	RWE

Revision Change Log			
Rev No.	**Page**	**Section**	**Description**
07	12	1	Document reference updates.
07	12	1	Grammar amendment.
07	20	1.5	Document reference updates.
07	22	2	Document reference updates.
07	46	5.3	Update to Marine Licence application status.
07	52	6.2.2	Document reference updates.
07	55	6.3.2	Document reference updates.
07	58	6.3.3	Document reference and grammar updates.
07	62	6.3.4	Document reference updates.
07	64	6.3.4	Document reference updates.
07	65	6.3.4	Clarification on site selection process.
07	66-69	6.3.4	Details presented from latest stages of site selection.
07	67	6.3.4	'Marine Licence area' replaces 'preferred candidate site'.
07	68	6.3.4	Update to Marine Licence application status.
07	70	6.3.4	Figure 6-2 updated for clarity.
07	74	6.3.4	Figure 6-7 updated to include marine licence area.
07	82	6.3.8	'Marine Licence area' replaces 'preferred candidate site'.
07	84	6.3.8	Update regarding survey progress and marine licence.
07	84	6.3.8	Update on invitation to tender for ANS.
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07	96	8	Document reference update.
07	110	Appendix A	The Crown Estate Letter of Comfort updated to reflect progress

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Glossary

Term	Definition
Apparently Occupied Nests (AON)	An active nest occupied by a bird, pair of birds, or with eggs or chicks present.
Biologically Defined Minimum Population Size	An estimate of the number of individuals required for a high probability of survival of a population over a given period of time.
Competent authority	Is either a public body that decides to give a licence, permit, consent or other permission for work to happen, adopt a plan or carry out work for itself (such as a local planning authority), a statutory undertaker carrying out its work (such as a water company or an energy provider); a minister or department of government; or anyone holding public office (such as a planning inspector).
Concurrent scenario	A potential construction scenario for the Projects where DBS East and DBS West are both constructed at the same time.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Development Scenario	Description of how the DBS East and/or DBS West Projects would be constructed either in isolation, sequentially or concurrently.
Dogger Bank South (DBS) Offshore Wind Farms	The collective name for the two Projects, DBS East and DBS West.
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 Statement (ES)	A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.

Term	Definition
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive. This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas, and is defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017.
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for certain topics.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Habitats Regulations Assessment (HRA)	The process that determines whether or not a plan or project may have an adverse effect on the integrity of a European Site or European Offshore Marine Site.
Impact	Used to describe a change resulting from an activity via the Projects, i.e. increased suspended sediments / increased noise.
In Isolation Scenario	A potential construction scenario for one Project which includes either the DBS East or DBS West array, associated offshore and onshore cabling and only the eastern Onshore Converter Station within the Onshore Substation Zone and only the northern route of the onward cable route to the proposed Birkhill Wood National Grid Substation.
Intraspecific	Produced, occurring or existing within a species or between individuals of a single species.

Term	Definition
Kittiwake Strategic Compensation Plan (KSCP)	Document produced as part of The Crown Estate's Derogation Case in support of the Round 4 Plan which must be adhered to by Dogger Bank South West, Dogger Bank East and Outer Dowsing through their agreement for lease conditions. The overall objective of the KSCP is "*to detail the development and delivery of strategic compensation to ensure the overall coherence of the UK NSN in relation to kittiwake by identifying suitable measures, providing a pathway to those measures and in turn providing assurance that compensation will be delivered for the impact on kittiwake, subject to refinement during the project level HRA process which is required as a matter of law*".
Kittiwake Steering Group	The Strategic Steering Group formed by The Crown Estate to develop kittiwake compensation for the Round 4 Plan. This group includes representatives from The Crown Estate and their technical advisor NIRAS Group (UK), Natural England, Joint Nature Conservation Committee, Department for Foor, Environment and Rural Affairs, Department for Energy Security and Net Zero, Outer Dowsing Offshore Wind and RWE Renewables UK.
Marine Protected Area (MPA)	Areas of the ocean established to protect habitats, species and processes essential for healthy, functioning marine ecosystems. In England, MPAs are designated to protect specific habitats or species (also known as 'features') and have conservation objectives which state what conservation outcomes the MPA is designed to achieve.
Round 4 Plan	The Fourth Offshore Wind Seabed Leasing Round undertaken by The Crown Estate and adopted in January 2023.
Sequential Scenario	A potential construction scenario for the Projects where DBS East and DBS West are constructed with a lag between the commencement of construction activities. Either Project could be built first.
Special Areas 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

Term	Definition
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
Statutory Nature Conservation Bodies (SNCBs)	Comprised of the Joint Nature Conservation Committee, Natural Resources Wales, Department of Agriculture, Environment and Rural Affairs/Northern Ireland Environment Agency, Natural England and Scottish Natural Heritage, these agencies provide advice in relation to nature conservation to government
The Applicants	RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (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 (DBS) Offshore Wind Farms).

Acronyms

Term	Definition
AA	Appropriate Assessment
AfL	Agreement for Lease
AEoI	Adverse Effect on Integrity
AON	Apparently Occupied Nests
AONB	Areas of Outstanding Natural Beauty
ANS	Artificial Nesting Structure
BDMPS	Biologically Defined Minimum Population Size
BEIS	Department for Business, Energy and Industrial Strategy
BESS	British Energy Security Strategy
BGS	British Geological Survey
BRAG	Black, Red, Amber, Green
CI	Confidence Interval

Term	Definition
CIMP	Compensation Implementation and Monitoring Plan
COWSC	Collaboration on Offshore Wind Strategy Compensation
CPT	Cone Penetration Test
CRM	Collision Risk Modelling
DAS	Digital Aerial Survey
DBS	Dogger Bank South offshore wind farms
DCO	Development Consent Order
Defra	Department for the Environment and Rural Affairs
DEP	Dudgeon Extension Project
DESNZ	Department for Energy Security and Net Zero
DIN	Dissolved Inorganic Nitrogen
DML	Deemed Marine Licence
DO	Dissolved Oxygen
EC	European Commission
EIA	Environmental Impact Assessment
EoI	Expression of Interest
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
EU	European Union
EWG	Expert Working Group
FFC SPA	Flamborough and Filey Coast Special Protection Area
FID	Final Investment Decision
HPAI	Highly Pathogenic Avian Influenza
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Over-riding Public Interest
ITT	Invitation to Tender

Term	Definition
JNCC	Joint Nature Conservation Committee
KCSG	Kittiwake Compensation Steering Group
KSCP	Kittiwake Strategic Compensation Plan
KSIMP	Kittiwake Strategic Implementation and Monitoring Plan
LoSCM	Library of Strategic Compensatory Measures
MBES	Multibeam Echosounder
MCA	Maritime and Coastguard Agency
MCZ	Marine Conservation Zone
MMO	Marine Management Organisation
MoD	Ministry of Defence
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MRF	Marine Recovery Fund
MRFO	Marine Recovery Fund Operator
NFFO	National Federation of Fishermen's Organisations
NGO	Non-Governmental Organisation
NMC	Non-material Change
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NSN	National Site Network
OCP	Offshore Converter Platform
ODOW	Outer Dowsing Offshore Wind
OEUK	Offshore Energies United Kingdom
OREI	Offshore Renewable Energy Installations
OWIC	Offshore Wind Industry Council
OWEIP	Offshore Wind Environmental Improvement Package
OWF	Offshore Wind Farm

Term	Definition
P2P	Pathways to Growth
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SEI	Supporting Environmental Information
SEP	Sheringham Shoal Extension Project
SNCB	Statutory Nature Conservation Body
SoS	Secretary of State
SPA	Special Protection Area
SSS	Side Scan Sonar
ToR	Terms of Reference
UK	United Kingdom
UXO	Unexploded Ordnance

1 Introduction

1.1 Project Background

1. RWE Renewables UK Dogger Bank South East Limited and RWE Renewables UK Dogger Bank South West Limited ('the Applicants') are applying for a single Development Consent Order (DCO) for both the Dogger Bank South (DBS) East and DBS West offshore wind farms (hereafter referred to as 'the Projects'). When fully operational, the Projects would have the potential to generate renewable power for over 3 million homes in the United Kingdom (UK) from up to 200 wind turbines[1].

2. The Applicants submitted as part of their DCO application **Volume 6, Report to Inform Appropriate Assessment (RIAA)** [APP-045, AS-051, AS-047, AS-085], which provides the information necessary for the competent authority to undertake an Appropriate Assessment (AA) to determine if there is any Adverse Effect on Integrity (AEoI) on the UK National Site Network (NSN). Following receipt of Relevant Representations, an update of **Volume 6, Report to Inform Appropriate Assessment (RIAA) Part 4 of 4 (Revision 3)** [AS-086] was provided to the Examining Authority in the pre-examination period.

[1] Calculation based on 2021 generation, and assuming average (mean) annual household consumption of 3,509 kWh, based on latest statistics from Department of Energy Security and Net Zero (Subnational Electricity and Gas Consumption Statistics Regional and Local Authority, Great Britain, 2021, Mean domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2021.

3. For kittiwake (*Rissa tridactyla*) from the Flamborough and Filey Coast Special Protection Area (FFC SPA), the Applicants' **RIAA HRA Part 4 of 4 (Revision 5)** [REP6-008] concludes that AEoI cannot be ruled out as a result of predicted collision mortality, when considered in-combination with other offshore wind farms (OWFs). This conclusion is consistent with the outcome of The Crown Estate's Plan Level Habitats Regulations Assessment (HRA) with respect to FFC SPA kittiwake (see section 3.1 below for further information) and the Secretary of State's (SoS) conclusion for recently consented OWF projects (e.g. Hornsea Three, Norfolk Vanguard, Norfolk Boreas, East Anglia One North, East Anglia Two, Hornsea Four and the Sheringham Shoal and Dudgeon Extension Projects (SEP & DEP)). As such, the Applicants have put forward, as part of their consent application, measures to compensate for the predicted impacts of the Projects, which are described in this Project-Level Kittiwake Compensation Plan. This document forms part of the Applicants' overarching **Volume 6, Habitats Regulations Derogation: Provision of Evidence (Revision 4)** [REP7-020].

1.2 The Crown Estate's Plan Level HRA

4. As part of the Plan Level HRA for the Fourth Offshore Wind Seabed Leasing Round (the 'Round 4 Plan') (The Crown Estate, 2022), The Crown Estate (as the competent authority) concluded that an AEoI as a result of the Round 4 Plan could not be ruled out for the FFC SPA breeding kittiwake feature and the Dogger Bank Special Area of Conservation (SAC) sandbanks feature, in-combination with other plans and projects. With respect to kittiwake, this conclusion was reached due to the potential increase in mortality of FFC SPA breeding kittiwakes resulting from the operation of the Outer Dowsing and the Dogger Bank South OWFs, estimated to be 108 collisions per annum (The Crown Estate, 2022).

5. The Crown Estate submitted a 'derogation case' to the SoS alongside their RIAA (The Crown Estate, 2022) which included a commitment to develop a Kittiwake Strategic Compensation Plan (KSCP). The overall objective of the KSCP was "*to detail the development and delivery of strategic compensation to ensure the overall coherence of the UK NSN in relation to kittiwake by identifying suitable measures, providing a pathway to those measures and in turn providing assurance that compensation will be delivered for the impact on kittiwake, subject to refinement during the project level HRA process which is required as a matter of law*".

6. Strategic kittiwake compensation for the purposes of Round 4 is defined in this document as compensatory measures delivered collectively to address the AEoI of the FFC SPA from the Round 4 Plan (i.e. from Outer Dowsing and the Dogger Bank South OWFs).

7. On 15th July 2022, the SoS for Business, Energy and Industrial Strategy (BEIS) (now the Department for Energy Security and Net Zero (DESNZ)) approved The Crown Estate's derogation case and thus, The Crown Estate adopted the Round 4 Plan and subsequently entered into Agreements for Lease (AfL) for the six projects comprising Round 4.

8. The SoS's approval of the derogation case was conditional upon The Crown Estate establishing a steering group tasked with developing and agreeing upon the KSCP, monitoring the compensatory measures and putting in place adaptive management if necessary. Following the adoption of the Round 4 Plan, The Crown Estate formed a Round 4 Plan Strategic Steering Group for kittiwake compensation (hereafter referred to as the 'Kittiwake Steering Group') in accordance with the agreed Terms of Reference (ToR). The Crown Estate subsequently published the KSCP in February 2024, following 14 months of engagement and development by the Kittiwake Steering Group.

9. In accordance with the KSCP, The Crown Estate is required to submit a Kittiwake Strategic Implementation and Monitoring Plan (KSIMP) to the SoS for DESNZ prior to the operation of any wind turbine generator of Outer Dowsing and the Dogger Bank South OWFs. This document will provide further details on the delivery and implementation of the plan level compensatory measures. It will also secure the necessary funding and ensure the benefits of the compensatory measures are shared across the Round 4 Plan. An outline version of the KSIMP (which details the proposed content of the KSIMP) was published by The Crown Estate as an appendix to the KSCP.

10. The Projects are required to adhere to the KSCP under the terms of their AfL. The Applicants are required to participate in the process outlined in the KSCP and comply with, undertake, and maintain (as necessary) the compensatory measures required to be adopted pursuant to the KSCP. It, therefore, follows that the compensatory measures proposed by the Applicants as part of their project-level derogation case are expected to align with the measures and approach outlined in the KSCP and be secured as a requirement of the DCO.

11. The KSCP and supporting appendices have played a crucial role in shaping the Projects' approach to the development of compensatory measures for kittiwake. Hence, the KSCP and the associated appendices outlined below have been submitted as part of the Applicants' DCO application for consideration alongside this Project-Level Kittiwake Compensation Plan.

    - **Volume 6, Round 4 Kittiwake Strategic Compensation Plan (KSCP)** [APP-053]

- Appendix A: Outline Kittiwake Strategic Implementation and Monitoring Plan
- Appendix B: Letter of Acceptance from the Secretary of State
- Appendix C: Kittiwake Strategic Compensation Plan – Agreement Log
- Appendix D: Round 4 Strategic Compensation – Artificial Nesting Structure Site Selection

12. The measures agreed by the Kittiwake Steering Group and presented in **Volume 6, KSCP** [APP-053] for the Round 4 Plan to compensate for a predicted impact on the FFC SPA kittiwake feature of 108 collisions per annum (The Crown Estate, 2022) include (in order of anticipated ecological effectiveness):

- Management of fisheries to increase prey availability; and
- Artificial Nesting Structures (ANS) (offshore is preferred over onshore structures).

13. Habitat creation and other enhancement measures to increase prey availability were also included within the KSCP as a resilience measure, capable of supporting the other measures outlined above. It cannot be considered a primary compensation measure for delivery in isolation owing to the limited evidence available to support the ability of this measure to adequately compensate for predicted impacts to kittiwake.

14. Under the ToR, the Kittiwake Steering Group will continue to exist until all obligations have been discharged, including post-consent requirements such as development and submission of the KSIMP to the SoS for approval. Thus, the Kittiwake Steering Group will continue to operate following submission of the Applicants' DCO application and during its examination. Any questions related to **Volume 6, KSCP** [APP-053] from the Examining Authority during the DCO examination process will be directed by the Applicants to The Crown Estate as chair of the Kittiwake Steering Group for a response.

15. Further information about The Crown Estate's approach to the development of the plan level compensatory measures can be found in section 3.1 below.

1.3 Strategic Compensation for Offshore Wind

16. In April 2022, the UK Government published the 'British Energy Security Strategy' (BESS) (HM Government, 2022). The BESS committed to implementing an Offshore Wind Environmental Improvement Package (OWEIP), which included, among others, measures to:

- Revise the HRA process for offshore wind to facilitate the delivery of compensation measures whilst maintaining valued protection for wildlife.
- Facilitate the delivery of strategic environmental compensation measures, including development of a library of compensation measures, through the Collaboration on Offshore Wind Strategic Compensation (COWSC)[2].
- Implement an industry-funded Marine Recovery Fund (MRF) to which developers can choose to contribute to meet their environmental compensation obligations; and
- Implement a strategic monitoring programme to improve understanding of the environmental impacts of offshore wind projects.

17. The purpose of the OWEIP and these measures is to accelerate and de-risk the consenting of offshore wind, whilst ensuring environmental protections are maintained and domestic and international law is adhered to.

18. As outlined in the National Policy Statement (NPS) for renewable energy infrastructure (EN-3) (DESNZ, 2023; DESNZ, 2025a), the UK Government is still developing its policies on strategic compensation through the COWSC programme. However, in February 2024, the SoS for the Department for the Environment and Rural Affairs (Defra) approved the following compensatory measures recommended by COWSC for inclusion within the library of strategic compensatory measures (LoSCM) and for strategic delivery as compensation for offshore wind projects (Defra, 2024a):

- For benthic habitats:
  - Designation and/or extension of Marine Protected Areas (MPAs).
- For seabirds:
  - Offshore ANS for kittiwake in English waters (only available for projects up to and including Round 4); and
  - Predator eradication and reduction.

[2]Collaboration on Offshore Wind Strategy Compensation (COWSC) brings together industry, environmental non-government organisations (NGOs), statutory nature conservation bodies (SNCBs), the UK Government and Devolved administrations and other relevant stakeholders with the purpose of finding strategic compensation solutions that enable the required development of offshore wind, whilst offsetting any impacts to the environment.

19. Sections 291 and 292 of the Energy Act 2023 enable the use of strategic compensation measures and the SoS to make regulations related to the establishment, operation and management of one or more MRFs for the development of offshore wind and associated infrastructure, respectively.

20. Interim guidance was published by DESNZ in January 2025 (DESNZ, 2025b) to support offshore wind developers in understanding how they can refer to the strategic compensation measures in the LoSCM ahead of the MRF being operational. Crucially, guidance confirms the eligibility of the Projects, as Round 4 projects, for strategic compensation.

21. Guidance was accompanied by a Ministerial Statement from Defra (Defra, 2025a) confirming consultation on reforms to the environmental compensation requirements for offshore wind projects, looking to bring in legislation in Autumn 2025. This will: "*aim to increase the number of measures available to developers to offset the adverse impacts of offshore wind developments, whilst retaining a robust process that ensures damage to our precious marine environment remains compensated for*". Furthermore, guidance confirms the launch of a MRF in late 2025 to provide an optional mechanism for developers to fund strategic compensation measures.

22. In the case of offshore ANS, where offshore wind developers wish to rely on this measure for kittiwake compensation ahead of the MRF being operational, they will be required to deliver the measure either themselves, or in collaboration with another eligible project. Guidance states that where possible, developers should work collaboratively to deliver larger and fewer offshore ANS in optimal locations.

23. Applicants may include a provision within their draft DCO allowing for a contribution to be made to the MRF as an alternative to delivering offshore ANS themselves, once it is operational. However, this does not guarantee the availability of offshore ANS, and the relevant SNCB must be consulted. Such a provision within the draft DCO would most likely restrict works predicted to result in an adverse impact to kittiwake (in the case of the Projects, this would be from the point of turbine operation) until evidence is provided that:

- An appropriate level of compensation has been secured through the MRF;
- The amount of any such contribution into the MRF has been agreed between Defra and the applicant; and
- Payment has been made for the compensation measure.

24. Note that contributions to the MRF alone cannot secure consent in isolation and may only be relied upon alongside project led measures delivered as a package.

25. COWSC is currently in the process of developing implementation groups for the strategic compensation measures. It is the Applicants' understanding that these groups will be responsible for developing delivery plans which will outline key aspects of implementation, for example, site selection, design, delivery timescales, monitoring and adaptive management, etc. However, the timescales for the establishment of the COWSC implementation groups and delivery of the implementation plans as well as the measures themselves are currently unknown. The Applicants will continue to engage with Defra, the COWSC group and relevant industry forums post-application on progress with respect to the implementation of these strategic compensatory measures.

26. In April 2025 Defra launched a consultation for the establishment of the MRF (Defra, 2025b). The consultation sets out draft guidance for how the MRF will operate and be managed, providing an opportunity for stakeholders to influence how the MRF will function. The consultation will run until 12th May 2025, with final guidance to be published in autumn 2025 alongside the Statutory Instrument, after which developers will be able to make applications to the MRF.

27. The consultation document confirms that Defra will be the MRF operator (MRFO), with the ability to delegate or subcontract certain responsibilities. Defra will be responsible for approving strategic compensation measures into the LoSCM, with advice from COWSC and SNCBs, and the MRF will only deliver measures from the LoSCM. If a compensatory measure no longer has capacity to provide further compensation to new applicants, or the status of the deliverability of the measure changes, it will be removed from the LoSCM and reintroduced if further capacity becomes available. If the LoSCM does not contain an SCM that suits the applicant's requirements, the applicant will not be able to use the MRF.

28. The proposed MRF will allow applicants to 'reserve' compensation, if available, in agreement with SNCBs, in advance of submitting a DCO application. The amount of compensation reserved can be renegotiated with the MRFO throughout the examination and in response to the SoS's assessment of the level of compensation required. Developers can also choose to make up any shortfall by delivering their own compensation.

29. The applicant's DCO requirements pertaining to the reserved measure will be satisfied once DESNZ has received proof of the agreement of payment with the MRFO and evidence that the full payment, or the first of a series of instalments, has been made to the MRF. At this point, the MRFO will take on responsibility for the delivery of the agreed compensation as set out in the MRF IMP, including responsibility for monitoring and adaptive management. In instances with annualised or repeat scheduled payment plans the contractual agreement between the MRF and the developer will stipulate obligations imposed on the developer for the fulfilment of payment conditions.

1.3.1 Offshore Wind Industry Council (OWIC)

30. The Applicants are active members of the Offshore Wind Industry Council (OWIC) derogation sub-group which was formed in 2021 to support the work of the Pathways to Growth[3] (P2G) Coordination Group and to aid collaboration across the offshore wind industry. The P2G is the Sector Deal's workstream focussed on identifying and addressing the key environmental and consenting challenges that will be a barrier to the UK meeting its offshore wind 2030 target and playing its full role in delivering net zero. This includes HRA derogation, which is recognised as a key barrier to the growth of offshore wind.

31. The OWIC derogation sub-group has supported the work of the COWSC group in developing strategic compensation measures for offshore wind. The Applicants will continue to actively engage in the OWIC derogation sub-group and support the development and delivery of strategic compensation measures for the relevant sites / features through this collaborative initiative.

[3] OWIC (2024). The Sector Deal's workstream focussed on identifying and addressing the key environmental and consenting challenges that will be a barrier to the UK meeting its offshore wind 2030 target and playing its full role in delivering net zero. Recognising the scale of the challenge, P2G brings together government representatives, SNCBs and industry across the UK's Devolved Administrations to work together in partnership.

1.4 Purpose of Document

32. This document sets out the details of the proposed project-level compensatory measures for kittiwake from the FFC SPA. It builds upon the information presented in **Volume 6, KSCP [APP-053]** and the supporting appendices to demonstrate how the measures identified and secured at the plan level can be implemented by the Projects to compensate for their predicted impact on breeding kittiwakes from the FFC SPA.

33. As such, this document provides the following details in line with the Natural England Checklist (where relevant) for each of the proposed compensation options:

- Overview;
- Scale;
- Delivery mechanism i.e. how the measures are proposed to be delivered;
- Location;
- Outline design details;
- Timescales;
- Monitoring, maintenance and adaptive management;
- Outline implementation and delivery roadmap; and
- Potential impacts from implementation of the compensation.

34. This Project Level Kittiwake Compensation Plan is accompanied by a **Volume 6, Outline Kittiwake Compensation Implementation and Monitoring Plan (CIMP)** [APP-054]. An **Outline Kittiwake CIMP (Revision 2)** [REP4-022] to be submitted during DCO Examination has also been produced by the Applicants upon request from the Examining Authority and Natural England. The final CIMP will be approved by the SoS prior to the start of the offshore works. The Kittiwake CIMP when finalised post-consent will set out detailed delivery proposals for the agreed compensatory measures based on the information provided in this document and the supporting annexes.

35. This document was updated prior to Examination commencement to reflect the revised impact calculated for kittiwake following Natural England's request in Relevant Representations to update the offshore ornithology assessment in line with SNCB Best Practice Guidance, and to provide an update on the status of The Crown Estate Proximity Checks for shortlisted ANS locations. An updated assessment was provided in the pre-examination period (**Offshore Ornithology EIA Update** [AS-057] and **RIAA HRA Part 4 of 4 (Revision 3)** [AS-085]).

1.5 Implications of the Project Development Scenarios

36. The Projects may be delivered under a range of project development scenarios. Details of the scenarios and how these are assessed in the DCO application are set out in section 5.1.1 of **Volume 7, Chapter 5 Project Description (Revision 4)** [REP7-034] of the Environmental Statement (ES). The Applicants' approach to the development of the proposed compensatory measures has assumed that both DBS East and DBS West are developed and that the package of measures proposed for each of the relevant sites and features outlined in section 1.1 is considered to deliver the necessary level of compensation (factoring in the risks and uncertainty associated with delivering successful compensation) to address the worst-case impacts of both DBS East and DBS West, as required by draft Defra guidance (Defra, 2021).

37. The development scenarios for the Projects include:

- In Isolation Scenario – where only DBS East or DBS West is developed.
- Concurrent Scenario– where DBS East and DBS West are both constructed at the same time.
- Sequential Scenario – both DBS East and DBS West are developed sequentially.

38. As outlined in **Volume 7, Chapter 5 Project Description (Revision 4)** [REP7-034] of the ES, the Applicants would develop DBS East and DBS West transmission infrastructure as co-ordinated projects and, where practicable, the Projects would co-locate infrastructure to reduce overall environmental impacts and disruption. However, there is no predicted impact on kittiwake from the development of the Projects' transmission infrastructure.

39. For kittiwake, it is the predicted impact of birds colliding with the Projects' operational offshore wind turbines that requires compensation. In all three development scenarios, first power of one or both Projects is expected in Q4 2029 at the earliest. Up to 100 wind turbines will be installed at each of DBS East and DBS West (subject to the final turbine technology), equating to a maximum of 200 turbines across the two Projects.

40. Where DBS East and DBS West are delivered in the Sequential Scenario, the overall final package of compensation to be delivered will be the same as in the Concurrent Scenario. The Applicants therefore consider it practical to deliver all of the compensation under a single Compensation Plan. If two offshore ANS are delivered these may be delivered either at the same time or at different times and will be agreed through the Kittiwake CIMP (should this be required in addition to the KSIMP). If a Sequential or Concurrent Scenario is taken forward the compensation will be split across both projects and potentially across other developers on a strategic basis rather than identifying a single offshore ANS per project. In the Sequential Scenario, this may mean that one project delivers compensation earlier than may have otherwise been required if it were a standalone project, which could be at risk e.g. prior to Final Investment Decision (FID). The Applicants consider however that the second project would have the benefit of the compensation being in place slightly longer than the first project thereby reducing pressure on the onward project programme.

41. Should DBS East or DBS West be delivered in isolation then it would be necessary to deliver only the scale of measures required to achieve adequate compensation in proportion to the impacts predicted from the given project (DBS East or DBS West). Compensation would be delivered on a scale appropriate to the nature and extent of the predicted impact from DBS East, or DBS West.

42. The scale of compensation to be delivered by the Projects will be confirmed within the Kittiwake CIMP (should this be required in addition to the KSIMP) once project-level impacts have been determined by the SoS.

2 Legislation & Guidance

43. The HRA process covers those features designated under the European Council Directive 2009/147/EC on the Conservation of Wild Birds (the 'Birds Directive') and Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the 'Habitats Directive'). The UK is also required to meet its obligations under relevant international agreements such as the Ramsar Convention.

44. The Birds Directive provides a framework for the conservation and management of wild birds in Europe. The relevant provisions of the Directive are the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex I of the Directive and for all regularly occurring migratory species (required by Article 4). The Directive requires national Governments to establish SPAs and to have in place mechanisms to protect and manage them. The SPA protection procedures originally set out in Article 4 of the Birds Directive have been replaced by the Article 6 provisions of the Habitats Directive.

45. Further details of the relevant legislative and policy context are provided in **Volume 6, Habitats Regulations Derogation Provision of Evidence (Revision 4)** [REP7-020].

2.1 UK National Legislation

46. In England and Wales, the Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations'), the Wildlife and Countryside Act 1981 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (the Offshore Habitats Regulations) (which applies outside of 12 nautical miles) transposed the Habitats Directive and Birds Directive into English and Welsh law.

47. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (the EU Exit Regulations) make changes to the Habitats Regulations so that they continue to work (are operable) following the UK's exit from the EU on 31st January 2020. While the basic legal framework for HRA is maintained, the EU Exit Regulations transfer functions previously undertaken by the European Commission (EC) to UK Ministers. Furthermore, where the Habitats Regulations continue to use the term 'European sites', those sites now form part of a UK NSN rather than the European 'Natura 2000' site network.

48. The Habitats Regulations place an obligation on 'competent authorities' to carry out an AA of any proposal likely to significantly affect a designated site, to seek advice from Natural England and not to approve an application that would have an adverse effect on a designated site unless certain conditions are met (where there are no alternative solutions, the plan or project can only proceed if there are Imperative Reasons of Over-riding Public Interest (IROPI) and if the necessary compensatory measures can be secured). The competent authority in the case of the Projects is the SoS for the DESNZ.

2.2 Guidance on Compensatory Measures

49. If the competent authority determines, after conducting an AA, that an AEoI on a European site cannot be ruled out, and that there are no alternative solutions and IROPI, Regulation 36 of the Conservation of Offshore Marine Habitats and Species Regulations 2017 requires that "The appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of Natura 2000 is protected."

50. EC (2019) explains that for SPAs, the overall coherence of the European site network can be maintained by:

- Compensation that fulfils the same purposes that motivated the site's designation.
- Compensation that fulfils the same function along the same migration path.
- The compensation site(s) are accessible with certainty by the birds usually occurring on the site affected by the project.

51. Defra has recently released for consultation[4], updated policy information for MPA assessments (Defra, 2024b). This document expands upon the best practice guidance for developing compensatory measures in relation to MPAs which was consulted upon in July 2021 (Defra, 2021) and is intended to inform updated guidance which is anticipated to be published in late 2024.

[4] Consultation ran from 9th February 2024 to 1st April 2024. The consultation document (Defra, 2024b) expressly states in section 3.1 that "*the draft guidance set out below for consultation should not be relied upon by stakeholders, statutory bodies or decision makers during the planning process*".

52. Defra (2021) introduced a hierarchical approach for determining appropriate compensatory measures within the marine environment. The central tenet of this approach is to prioritise compensatory measures that address the same impact at the same location. However, in cases where this is not feasible, measures supporting similar or comparable ecological functions at alternative locations could serve as adequate compensation and should be considered. This hierarchical approach offers flexibility, acknowledging that it may not always be practical to compensate for the same feature at risk within the impacted site. Defra (2024b) proposes refinements to the hierarchical approach outlined in Defra (2021) but maintains this core principle.

53. Ideally, compensation should be functioning before the effect takes place, although it is recognised that this may not always be possible, as stated in the Defra (2021) guidance: "*A protected feature should not be impacted before compensation is secured. Ideally, measures should be in place, functioning and contributing to the network before development begins. Defra recognises that in some cases and for certain habitats and species this could take several years and therefore it may not be feasible for the compensatory measures to be complete before the impact takes place. Where this is not possible, it is important that necessary licences are in place, finances are secured, and realistic implementation plans have been agreed with the appropriate bodies to demonstrate that the compensatory measure is secured.*"

54. Compensatory measures for the kittiwake feature of the FFC SPA are presented in the following sections in line with Defra's draft best practice guidance (Defra, 2021) and the hierarchy presented within it.

55. In addition, Natural England has developed a list of those aspects of compensatory measures that it considers need to be described in detail when developers are submitting or updating applications where impacts on MPA are anticipated. Whilst not exhaustive, it lists key areas where Natural England considers sufficient detail is needed to provide the SoS with appropriate confidence that compensatory measures can be secured. The checklist is summarised below:

    - What, where, when: clear and detailed statements regarding the location and design of the proposal.
    - Why and how: ecological evidence to demonstrate compensation for the impacted site feature is deliverable in the proposed locations.

- Demonstrate that on-ground construction deliverability is secured and not just the requirement to deliver in the DCO i.e. landowner agreement is in place.
- Policy/legislative mechanism for delivering the compensation (where needed).
- Agreed DCO/ DML conditions.
- Clear aims and objectives of the compensation.
- Mechanism for further commitments if the original compensation objectives are not met – i.e. adaptive management.
- Clear governance proposals for the post-consent phase – we do not consider simply proposing a steering group is sufficient.
- Ensure development of compensatory measures is open and transparent as a matter of public interest, including how information on the compensation would be publicly available.
- Timescales for implementation especially where compensation is part of a strategic project, including how timescales relate to the ecological impacts from the development.
- Commitments to monitoring specified success criteria.
- Proposals for an ongoing 'sign off' procedure for implementing compensation measures throughout the lifetime of the project, including implementing feedback loops from monitoring.
- Continued annual management of the compensation area to ensure other factors are not hindering the success of the compensation e.g. changes in habitat, increased disturbance as a result of subsequent plans/projects.

56. This list, and an equivalent list proposed by the Royal Society for the Protection of Birds (RSPB) has been used to help guide the development of the proposed compensatory measures at the pre-application stage.

57. The Applicants have prepared this Project Level Compensation Plan in accordance with the Natural England checklist outlined above. The necessary information is presented in section 112 and includes an outline implementation and delivery roadmap (see section 6.3.8) detailing how certain aspects of the Applicants primary compensation measure for kittiwake (offshore ANS) will be further developed post application to meet the objectives of this checklist. A summary of the status of the Applicants overall compensatory proposal for kittiwake against the Natural England checklist is provided in section 8.

3 The Development of Compensatory Measures

58. This section provides an overview of The Crown Estate's plan level approach to developing compensatory measures, highlighting key aspects that have informed the Projects' approach to the development of compensatory measures. Further information on The Crown Estate's proposed compensation approach is presented in **Volume 6, KSCP** [APP-053].

3.1 The Crown Estate's Approach to Developing Plan Level Compensatory Measures

3.1.1 Review of Compensatory Measures

59. An initial appraisal was undertaken in 2022 to identify potential compensatory measures for kittiwake which took account of options that:

- Have been proposed for other Southern North Sea OWF projects (e.g. Ørsted's Hornsea Three and Hornsea Four, Vattenfall's Norfolk Vanguard and Norfolk Boreas and Scottish Power Renewable's East Anglia ONE/TWO North) which have been subject to the DCO examination process and granted consent;
- Are being considered by the COWSC group for strategic delivery; and
- Are considered new or novel (i.e. untested).

60. This exercise identified a list of 14 potential compensatory measures (see Table 3.2 in **Volume 6, KSCP [APP-053]**) which were subsequently appraised using a qualitative approach based on Defra's draft guidance (Defra, 2021). From this, the Kittiwake Steering Group determined a shortlist of three measures that were deemed to have merit and were thus taken forward for further consideration. In order of anticipated ecological effectiveness, these measures included:

- Management of fisheries to increase prey availability;
- Onshore or offshore ANS; and
- Habitat enhancement and other enhancement measures to increase prey availability.

61. Of these potential options, the Kittiwake Steering Group considered prey enhancement via the management of sandeel fisheries (a key prey species for kittiwake) and the development of offshore ANS to be the preferred compensatory measures for kittiwake. Section 5 of **Volume 6, KSCP** [APP-053] outlines the ecological evidence which supports the proposal of these measures, drawing upon published literature and the large body of information that has been collated and presented as part of the OWF DCO applications outlined above (see **Volume 6, KSCP** [APP-053] for further information).

62. Offshore ANS is preferred by the Kittiwake Steering Group over onshore structures on the basis of the ecological evidence considered and uncertainty regarding the ecological effectiveness of developing further onshore ANS (in addition to those already implemented or planned). Nonetheless, as evidenced by the agreement log presented in **Volume 6, KSCP** [APP-053], the Applicants maintain the position that onshore ANS is a viable compensation option and offers many practical benefits over offshore structures. Furthermore, the Kittiwake Steering Group determined that a purpose-built ANS is more likely to result in a larger and more productive colony than if an existing platform were to be utilised.

63. The Kittiwake Steering Group considered 'habitat creation and other enhancement measures to increase prey availability' to be a resilience measure rather than a primary measure capable of compensating for the predicted impacts of the Round 4 Plan. This conclusion was reached due to the high level of uncertainty regarding the appropriate enhancement method and the challenges in demonstrating benefits for kittiwake. As such, the Kittiwake Steering Group advised that this measure would only be progressed following further discussion post-consent or via adaptive management following the implementation of the other compensatory measures identified. It was therefore not considered further within **Volume 6, KSCP** [APP-053].

3.1.2 Proposed Compensation Approach

64. Prey enhancement via the management of sandeel fisheries and associated ecosystem-based management is considered by the Kittiwake Steering Group to be the most ecologically effective means of increasing the breeding success of FFC SPA kittiwake. However, as acknowledged in **Volume 6, KSCP** [APP-053], the permanent closure of sandeel fisheries in English waters of the North Sea from 1st April 2024 raised doubts as to the viability of this option as a compensatory measure. Despite this uncertainty, the option remains within **Volume 6, KSCP** [APP-053], pending formal confirmation from Defra SoS regarding whether the closure could serve as compensation for offshore wind. However, no further information is provided within **Volume 6, KSCP** [APP-053] with respect to this potential measure.

65. In the absence of a clear steer from Government that fisheries management is an accepted and appropriate compensatory measure for offshore wind, the Kittiwake Steering Group recommends that strategic delivery of offshore ANS should be pursued as an alternative measure which can be delivered by developers (rather than relying on Government action). Several delivery options are presented in section 11 of the **Volume 6, KSCP** [APP-053]:

- The construction of two offshore ANS.
- The construction of an additional two tiers (500 to 1,500 nesting spaces) to Ørsted's Hornsea Four offshore kittiwake ANS, and the construction of one additional standalone offshore ANS.
- The construction of an additional two tiers (500 to 1,500 nesting spaces) to Ørsted's Hornsea Four offshore kittiwake ANS, and the construction of one standalone offshore ANS as adaptive management; or
- The construction of an additional two tiers (500 to 1,500 nesting spaces) to Ørsted's Hornsea Four offshore kittiwake ANS, and one onshore ANS.

66. The construction of two offshore ANS was preferred by the Kittiwake Steering Group to provide mitigation against risk of a single offshore ANS failing (agreed 24th January 2024). Furthermore, there was an ecological preference that the two offshore ANS be located at different sites, though it was concluded by the Kittiwake Steering Group that two ANS near to one another was also acceptable.

67. **Volume 6, KSCP** [APP-053] provides a framework for delivering offshore ANS for FFC SPA kittiwake and how this measure can be secured, implemented, monitored and adapted. Further information can be found in **Volume 6, KSCP** [APP-053] and is signposted in **Table 3-1**.

Table 3-1 Signposting Key Information Presented In ***Volume 6, KSCP [APP-053]***

Topic	Section of KSCP
Approach for determining the scale of compensation required for the Round 4 Plan	Section 8
Initial appraisal of suitable locations for siting offshore ANS	Section 9 and Appendix D
Design principles	Section 10
Delivery mechanism and how compensation will be secured	Section 11
Monitoring	Section 12
Adaptive Management	Section 13

3.2 The Applicants' Approach to Developing Project-level Compensatory Measures

68. The Applicants' approach to identifying and developing compensatory measures for kittiwake at the project level seeks to align with the outcomes of The Crown Estate's plan level approach where possible, as well as broader strategic opportunities emerging from government and industry-led initiatives such as the OWEIP and COWSC.

69. This approach acknowledges emerging policy drivers for more collaborative and/or strategic delivery of compensation and recognises the Applicants' commitment to supporting an industry-scale approach to delivering compensation. It also acknowledges the considerable amount of work that has been undertaken to date by various parties (including the Kittiwake Steering Group, HRA Expert Working Group (EWG)[5], COWSC, and other OWF developers as part of their DCO applications) to:

[5] HRA EWG's role is to provide advice on the process of determining compensation and recommended outcomes. The EWG includes Natural England, the Joint Nature Conservation Committee (JNCC), Defra, DESNZ, Natural Resources Wales, NatureScot, Marine Scotland, the Department for Agriculture, Environment and Rural Affairs of Northern Ireland, the Marine Management Organisation (MMO), the Wildlife Trusts, RSPB, and Whale and Dolphin Conservation.

- Identify and appraise potential compensatory measures, including novel options, in relation to various criteria (e.g. aims and objectives, ecological effectiveness, technical feasibility, spatial and temporal scale, additionality etc.).
- Iteratively develop proposals through a detailed process of consultation with stakeholders, including but not limited to, Natural England, JNCC, MMO, RSPB, the Wildlife Trust, National Trust; and
- Engage with other stakeholders where necessary including OWF developers, the Planning Inspectorate, DESNZ and the devolved administrations and Natural England and Defra through the OWIC derogation sub-group.

70. The NPS EN-3 and draft NPS EN-3 (DESNZ, 2023; DESNZ, 2025a) provide in-principle support to the implementation of strategic and collaborative compensation and to the Applicants' proposed commitment to delivering compensation for the Projects, where possible, on a more strategic and/or collaborative basis.

71. As outlined in section 1.2, the two measures short-listed within **Volume 6, KSCP** [APP-053] to compensate for the predicted impacts of the Round 4 Plan include:

- Management of fisheries to increase prey availability; and
- Onshore and offshore ANS, with a preference for offshore ANS.

72. The Applicants consider these measures to be the most ecologically effective and feasible means of delivering the necessary level of compensation for the Projects. As such, these measures were taken forward for consideration at the project level.

73. In line with **Volume 6, KSCP** [APP-053], 'habitat enhancement and other enhancement measures to increase prey availability' has not been taken forward as a compensatory measure at the project level at this time. However, the Applicants acknowledge this to be a potential resilience measure that could be delivered strategically at a later date to support, if required, the principal compensation measures outlined within section 6 of this plan.

74. Compensatory measures have been considered in the context of three potential delivery models: strategic, collaborative and project led. For the purpose of this plan, strategic, collaborative and project-led delivery is described as follows:

- **Strategic** – refers to measures that could be delivered via a Strategic Compensation Fund (e.g. the MRF - see section 1.2) which the UK

Government has confirmed is available for Round 4 projects to access or other strategic initiatives should these become available in the appropriate timescale for the Projects.

- **Collaborative** – refers to measures that would be appropriate to take forward as part of a collaborative approach with other developers either through bilateral or multilateral agreements.
- **Project-led** – refers to measures that could be taken forward for delivery solely by the Applicants.

75. The Projects expect to deliver their kittiwake compensation requirements in collaboration with Outer Dowsing OWF, in accordance with **Volume 6, KSCP** [APP-053]. However, it is considered necessary for the Projects to also develop compensation options at the individual project level to ensure that its compensation requirements can be delivered should Outer Dowsing OWF not proceed.

3.3 Stakeholder Engagement

76. The Applicants are active participants of the Kittiwake Steering Group and have engaged with a range of stakeholders through this forum at regular intervals during the Projects' pre-application phase to support the development of **Volume 6, KSCP** [APP-053] and to inform this project-level Kittiwake Compensation Plan. Feedback from this and other project-level consultations has informed the development of the Projects compensatory measures proposal.

77. Section 2 of **Volume 6, KSCP** [APP-053] sets out the engagement process for the Kittiwake Steering Group and provides details of the 12 meetings held between 9th December 2022 and 18th January 2024. An agreement log for the Kittiwake Steering Group is also presented in section 4 and Appendix C of **Volume 6, KSCP** [APP-053].

78. Additional stakeholder engagement has been undertaken during the pre-application and pre-examination phases to further inform the Applicants' approach to compensation at the project level. This engagement including key details is summarised in **Table 3-2** below.

79. The Applicants are active members of the OWIC derogation sub-group which is also working on strategic initiatives for the delivery of compensation for offshore wind (see section 1.3.1 for further information).

Table 3-2 Summary Of Consultation Undertaken For The Projects.

Date	Consultee (s)	Activity	Details
18th September 2023 - 2024	Hornsea Project 4	ANS collaboration meetings	The Applicants were regularly meeting with Hornsea Project 4 since September 2023 to progress plans to collaboratively deliver offshore ANS.
28th February 2024 - present	ODOW	ANS collaboration meetings	The Applicants have been regularly meeting with ODOW since February 2024 to progress plans to collaboratively deliver offshore ANS.
11th April 2024	Defra	Strategic compensation meeting	Meeting to discuss the Applicants' proposals with respect to strategic delivery of compensation and how this should be referred to in the DCO application. During this meeting, Defra confirmed that DESNZ would be publishing guidance imminently for OWF developers on how strategic compensation can be referred to in planning applications in advance of any necessary statutory instruments coming into force.
23rd April 2024	Planning Inspectorate	Projects update meeting	Meeting to appraise the Planning Inspectorate of the intended approach to the derogation case for the Projects and the development of the associated compensatory measures.
25th April 2024	MMO, Natural England and RSPB	Kittiwake Expert Topic Group (ETG) meeting	The purpose of this meeting was to set out for stakeholders how the Projects intended to build upon the outcomes of **Volume 6, KSCP [APP-053]** and to outline the level of information that would be provided as part of the DCO application, and the aspects that would be matured further post-submission. Specific information related to the Applicants project-led proposal for an offshore ANS was also presented. This included work undertaken to mature the initial Area of Search (AoS) appraisal undertaken by NIRAS (see Appendix D of **Volume 6, KSCP [APP-053])** to identify a shortlist of potential AoS

Date	Consultee (s)	Activity	Details
			for siting offshore ANS. Natural England provided feedback on compensation ratios and the framing of the compensatory measures proposed by the Applicants which has been reflected in this plan.
27th August 2024	DESNZ	Repurposing oil and gas platforms as ANS	The Applicants communicated with DESNZ on the potential to repurpose decommissioned offshore oil and gas platforms as ANS. The key outcome was that the repurposing of offshore installations is not a viable compensation option due to concerns surrounding the reclassification of oil and gas infrastructure, decommissioning commitments, health and safety concerns, and liability complexities.
24th September 2024	The Crown Estate	Offshore ANS lease	The Crown Estate lease team were given an update on the Projects site selection work to date for offshore ANS, shortlisted AoS locations and survey programme.
30th September 2024	MMO, Natural England and RSPB	Kittiwake Expert Topic Group (ETG) meeting	This meeting was for the Applicants to provide post-DCO submission updates to attendees. Kittiwake compensation progress in reference to offshore ANS site selection, survey programme and next steps was provided. The updated constraints assessment approach, maps with newly identified AoS and shortlisted sites were presented. Updates on collaboration discussions with ODOW were also provided. Natural England provided feedback and reaffirmed their position that a single ANS is not sufficient for the Projects' compensation.
1st October 2024	DEFRA	Strategic compensation meeting	The purpose of this meeting was to provide post-DCO submission updates on kittiwake compensation with a focus on offshore ANS site selection, and to receive updates from DEFRA on strategic compensation. DEFRA stated that the strategic compensation fund (MRF) is likely to be operational in 2025.

Date	Consultee (s)	Activity	Details
			Representatives also stated that DESNZ guidance is due alongside a ministerial statement from DEFRA in 2024. It is anticipated that the guidance will state that developers will be able to rely on the MRF in advance of it being operational, backed up by a ministerial note which will state that strategic compensation will be adequate to account for predicted impacts ahead for the 2030 target.
15th October 2024	DESNZ	Project Update Meeting	This engagement was focused on providing DESNZ a general project update, alongside sharing key comments received within relevant representations and matters raised in the ExA's Rule 6 letter. An update was provided on the current state of progression of each of the HRA Compensation measures outlined in the relevant Compensation Plans since submission [APP-052, APP-056, APP-059]. This update included a summary of the site selection process for ANS undertaken by the Applicants since DCO submission including the next steps to enable the further filtering of AoS prior to the selection of a site.
24th October 2024	Natural England	Ornithology assessment and compensation	The Applicants met with Natural England to discuss progress in the Projects compensation measures, and the scope of ornithology assessment updates following the Examining Authority's Rule 9 and Rule 17 letter. The outcome of this meeting was the establishment of timescales for updates to be made to pertinent documents, and a more thorough understanding on Natural England's behalf of the status of the Applicants' compensation measures.

Date	Consultee (s)	Activity	Details
25th October 2024	The Crown Estate	Offshore ANS lease	The Crown Estate confirmed that they are undertaking proximity checks on the AoS for ANS identified by the Applicants (based on the shapefiles provided) of which the results were anticipated imminently (note, a subsequent update on Proximity Checks is provided in section 7.3.4). A letter of Comfort confirming that The Crown Estate considers an Agreement for Lease for an Offshore ANS with the Applicants feasible is provided in Appendix A.
29th November 2025	Trinity House & Maritime and Coastguard Agency (MCA)	Offshore ANS	A meeting was held with Trinity House and the MCA to discuss the navigational feasibility study for the Applicants shortlisted ANS locations. The five shortlisted AoS were presented, and outputs of the navigation & shipping assessment were discussed alongside Marine Licence requirements. Particular attention was given to 'Site F' for which 'very high' risk areas were identified.
9th December 2024	Natural England	Offshore ANS	Written feedback was received from Natural England on the updated ANS areas of search. Natural England provided the Applicants with initial thoughts on the shortlisted sites and provided some additional points for consideration such as the use of Flamborough and Filey Coast SPA foraging data.
13th January 2025	Historic England	Offshore ANS	Discussion on site selection process and requirements for the Historic Environment for site selection & post consent
23rd January 2025	Natural England	Project Update Meeting	The Applicants met with Natural England to provide Project updates and to discuss Examination. Natural England gave details on when they will be providing feedback on ornithological updates and compensation measures as well as quantum calculations. The Applicants requested a regular meeting to progress discussions on compensation so

Date	Consultee (s)	Activity	Details
			that positions can be progressed during the Examination phase.
4th April 2025	Kittiwake Steering Group (Natural England, JNCC, The Crown Estate, NIRAS)	Offshore ANS	The Applicants met with members of the Kittiwake Steering Group to present an update on ANS site selection and design work to date. The design base case was presented to attendees, and any points of concern were discussed and next steps defined. The Steering Group also considered suitable approaches to monitoring the offshore ANS, health and safety concerns, as well as potential adaptive management measures.
1st April 2025	National Federation of Fishermen's Organisations	Offshore ANS	An introduction to the ANS was made by the Applicants who outlined the purpose and objectives of the ANS. The Applicants outlined the site selection process and detailed the next steps, including survey operations to the NFFO at the meeting.
28th May 2025	Natural England	Offshore ANS and compensation quantum	The Applicants provided a summary of the ANS site selection work to date and presented their preferred candidate site to Natural England. Feedback was sought on the site selection process & suitability of the final site from Natural England. Natural England were able to confirm the Applicants understanding of Natural England's position in relation to defining 'success' and 'scale' of the proposed compensation measure. The Applicant proposed an alternative approach to scaling the project led offshore ANS (i.e. determining number of nesting spaces required) in attempt to reach a mutually agreeable position within examination. The Applicants requested clarity regarding the application of compensation ratios.

4 Flamborough & Filey Coast SPA

4.1 Overview

80. The FFC SPA was designated in 2018. It is a geographical extension to the former Flamborough Head and Bempton Cliffs SPA, which was designated in 1993 (Natural England, 2018a).

81. The SPA is located on the Yorkshire coast between Bridlington and Scarborough and is composed of two sections. The northern section runs from Cunstone Nab to Filey Brigg, and the southern section from Speeton, around Flamborough Head, to South Landing. The seaward boundary extends 2km offshore and applies to both sections of the SPA.

4.2 Conservation Objectives

82. The conservation objectives for the FFC SPA site are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Birds Directive, by maintaining or restoring:

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

83. Natural England (2023a) has stated the target is to restore the size of the kittiwake breeding population at a level which is above 83,700 breeding pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.

4.3 Breeding Kittiwake Feature

84. The FFC SPA supports an internationally significant population of migratory kittiwake and contains the largest population in the UK. The SPA breeding population at classification was cited as 44,520 pairs or 89,040 breeding adults, for the period 2008 to 2011 (Natural England, 2018). Clarkson *et al.* (2022) reported the 2022 population was 44,574 apparently occupied nests (AON), or 89,148 breeding adults, while Burnell *et al.* (2023) reported a small increase to 45,504 AON, or 91,008 individuals. The baseline mortality of this population using the most recent figure is 13,287 breeding adult birds per year based on the published adult mortality rate of 14.6% (Horswill and Robinson, 2015).

85. The breeding season for kittiwake at FFC SPA commences in March when the kittiwake utilise the sheer cliff faces for nesting, using even the smallest of outcrops for nesting. Eggs are typically laid in May, with an average of two eggs per pair. Kittiwake chicks hatch in June, are fully fledged by July or August and have usually vacated the site by the end of August (Natural England, 2012). Typically, the breeding season for kittiwake is considered to commence on 1st March and end on 31st August.

86. Kittiwake also use the FFC SPA for important maintenance behaviours such as loafing, preening and bathing. The highest density of kittiwake at sea are usually found within 1km from the main colony during breeding season (McSorley *et al.* 2003) though they may forage up to 150km in single journeys and have a mean foraging range of 24.8 ± 12.1 km (Thaxter *et al.* 2012). Kittiwake feed on small shoaling fish near the surface of the water column, including sandeel, sprat and juvenile herring but also scavenge discards from fishing vessels in the local area when their preferred food sources are less abundant during the breeding season (Mitchell *et al.* 2004).

87. Supplementary advice on the conservation objectives was added for qualifying features of the FFC SPA in 2020 (Natural England, 2023a). For kittiwake, these are:

- Restore the size of the breeding population at a level which is above 83,700 breeding pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.
- Restore safe passage of birds moving between nesting and feeding areas.
- Restrict the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed.
- Restrict predation and disturbance caused by native and non-native predators.
- Maintain concentrations and deposition of air pollutants at below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System.
- Restore the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.

- Maintain the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding) at its current extent.
- Restore the distribution, abundance and availability of key food and prey items (e.g. sandeel, sprat, cod Gadidae spp., squid, shrimps Decapoda spp.) at preferred sizes.
- Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.
- Maintain the dissolved oxygen (DO) concentration at levels equating to High Ecological Status (specifically ≥5.7mg per litre (at 35 salinity) for 95% of the year), avoiding deterioration from existing levels.
- Maintain water quality and specifically mean winter dissolved inorganic nitrogen (DIN) at a concentration equating to High Ecological Status (specifically mean winter DIN is <12µM for coastal waters), avoiding deterioration from existing levels.
- Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.

4.4 Summary of Potential Impacts

88. The following sections provide a summary of the potential impact of the Projects on FFC SPA kittiwake as set out in the Applicants' **RIAA HRA Part 4 of 4 (Revision 3)** [AS-085], and include precautionary estimates derived by following SNCB guidance. This information sets the context for the compensatory measures. The SoS will ultimately determine the extent of the predicted impacts of the Projects on breeding adult kittiwakes from FFC SPA based on the conclusions of the AA.

4.4.1 Quantification of Collision Risk

89. Potential collision risk for kittiwake associated with the Projects was estimated using the Band (2012) Collision Risk Model (CRM). Full details of the input parameters used are provided in **Volume 7, ES Appendix 12.9 Collision Risk Modelling Inputs and Outputs** [APP-112].

4.4.1.1 Project Alone

90. **Table 4-1** presents a summary of the total collisions apportioned to the FFC SPA requiring compensation assuming two different breeding season impact scenarios (53% vs. 100%). The 53% adult value is derived from the stable age distribution which is an output obtained from the kittiwake population model following the method in Furness (2015). Natural England advised the Applicants to consider using observations of age class in the aerial survey data to calculate the proportion of adults present or else assume 100% are adults. Whilst deriving this estimate from survey data is a reasonable suggestion, in practice digital aerial imagery can only reliably distinguish two age classes: immatures (1st year) and older. A review of the survey data collected during the breeding season found that more than 95% of birds for which an age estimate was provided were categorised as adults. It is known that younger age classes associate with breeding colonies prior to reaching maturity at four years or older. Thus, basing age proportions on survey-based estimates will almost certainly overestimate the proportion of adults present since it will include 2nd and 3rd year birds. Therefore, the demographic-based adult percentage (53%) is considered to be a more realistic guide than the known overestimate obtained from survey data. Nonetheless, following Natural England's advice, a scenario whereby 100% of kittiwakes present during the breeding season were assumed to be adults is also presented.

91. It is also of note that there is increasing evidence of a large population of breeding kittiwake on oil and gas platforms in the North Sea, with estimates that around 30% of structures may be colonised with average counts in the region of 100 to 200 pairs (Outer Dowsing, 2024b). The presence of these birds will reduce the proportion assigned to the FFC SPA, further highlighting the considerable precaution attached to an impact derived from the assumption that all adults in the breeding season are breeding adults from FFC SPA.

92. Based on an adult kittiwake proportion of 53% applied to the breeding season, the combined mean annual total collision rate for DBS East and DBS West together is estimated to be 104.2 (95% CIs 52.1 – 204.9) FFC SPA breeding adult kittiwakes. This level of impact would increase the existing mortality of the SPA breeding population by 0.80% (0.35% from DBS East and 0.45% from DBS West). Assuming 100% adult kittiwake during the breeding season, the combined mean annual total collision rate for DBS East and DBS West together would be 191 (CIs 95.8 – 376.7). This would increase the existing mortality of the SPA breeding population by 0.80% to 1.47%.

93. The Applicants' **RIAA HRA Part 4 of 4 (Revision 3)** [AS-085] concluded that predicted kittiwake mortality due to operational phase collision risk at DBS East, DBS West, and the Projects together would not adversely affect the integrity of the FFC SPA.

94. For the purpose of this Project-Level Kittiwake Compensation Plan, the scale of compensation is presented in the context of the mean and upper 95% CI collision rates assuming either 53% or 100% adult kittiwake proportions applied to the breeding season impact (**Table 4-1**). The worst-case impact from the operation of DBS East and DBS West together based on the upper 95% CI is 377 birds per year.

Table 4-1 Summary of Kittiwake Total Collisions Apportioned to the FFC SPA Requiring Compensation. Note that breeding season impacts have been estimated assuming 53% of birds present were adults and also 100%

Site	Mean Annual Collisions (upper 95% CI) – assuming 53%	Mean Annual Collisions (upper 95% CI) – assuming 100%
DBS East	46 (93)	84 (169)
DBS West	58 (150)	107(278)
Total (DBS East + DBS West)	104 (205)	191 (377)

4.4.1.2 In-combination

95. The total predicted annual in-combination collision mortality for breeding adult kittiwakes from the FFC SPA assuming either 53% or 100% adult proportion from DBS is 380 and 466, respectively. The predicted annual in-combination collision mortality would result in a predicted change in adult mortality rate of 2.9 – 4.6%.

96. Based on these results and the assessment outlined in section 9.6.2.2 of **RIAA HRA Part 4 of 4 (Revision 3)** [AS-085], the Applicants have concluded that the collision impacts predicted at DBS East and DBS West in-combination with other projects, will not adversely affect the integrity of the FFC SPA.

97. Notwithstanding the above conclusion, the Applicants acknowledge that previous decisions on offshore wind farms by the SoS have concluded that an AEoI for kittiwake at the Flamborough and Filey Coast SPA could not be ruled out for in-combination collision risk (e.g. Hornsea Three, Norfolk Vanguard, Norfolk Boreas, East Anglia One North / Two, Hornsea Four and SEP and DEP). The Plan Level HRA conducted by The Crown Estate also concluded that an AEoI could not be ruled out. Given this, the Applicants assume that the SoS will conclude AEoI in this case also. Therefore, the Applicants do not consider it worthwhile to contest this point and on this basis concede AEoI on the Flamborough and Filey Coast SPA.

5 Compensation Quantum

5.1 Projects Alone

98. The impact of the Projects on adult kittiwakes from FFC SPA is estimated to be 104 to 191 birds per year (depending on the percentage of adult kittiwake proportions applied to the breeding season impact), with an upper 95% CI of 205 to 377 birds per year (section 4.4.1).

99. To determine the appropriate scale of compensation required to offset the predicted impacts of the Projects, the Applicants have considered two approaches: the 'New Colony Approach' proposed by Hornsea Three (Ørsted, 2020) and the Hornsea Four approach (APEM, 2021). This is consistent with **Volume 6, KSCP** [APP-053] which presents the number of nests required for the strategic delivery of offshore ANS for the Round 4 Plan using both methods. Further information on the two approaches can be found in section 8.2 of **Volume 6, KSCP** [APP-053].

100. **Table 5-1** presents the number of breeding pairs required to compensate for the predicted annual collision mortality from the Projects, calculated using the Hornsea Three and Hornsea Four approaches. The upper 95% CI values are provided in line with SNCB guidance, although the Applicants consider it likely that the impacts of the Projects will prove to be much less than these precautionary estimates. Figures are presented for a range of ratios for each of the compensation quantum scenarios (1:1, 2:1 and 3:1).

101. Whilst the New Colony Approach is favoured by Natural England, several aspects of this method are considered by the Applicants to result in an overestimation of compensation quantum. Further to this, following the SoS's approval of the Rampion 2 OWF, the Hornsea Four calculation is the most recently consented method for determining the scale of kittiwake compensation. Therefore the Applicants consider Hornsea Four's approach to be more appropriate.

102. The New Colony Approach contains age-related details on recruitment rates which makes the calculations difficult to follow. Examination of this approach indicates that a detailed age breakdown is unnecessary since the result from the age-based calculation is almost identical to that obtained by dividing the mortality by the overall (all age) natal dispersal rate. As such, there is no need to introduce this extra complexity.

103. The next step in the New Colony Approach estimates how many chicks are required to produce the number of adults estimated in the first step. This process is again undertaken through a complicated age-based procedure. However, this complexity is also unnecessary and simply dividing the mortality (allowing for natal dispersal obtained above) by survival to maturity (i.e. from fledging to age five) gives the same answer in a single step and has the distinct advantage of being straightforward to understand.

104. The next step is to calculate the number of nests required to produce the target chick number. This is calculated by dividing the number of chicks by the productivity rate. The result is the baseline number of nests required prior to the application of any compensation ratios (i.e. at a 1:1 ratio) and the same method is used by both the Hornsea Three and Hornsea Four methods, which the Applicants consider to be appropriate.

105. However, the New Colony Approach goes on to make a further calculation which is intended to allow for annual adult mortality from the 'new' colony. As above, this is based on a complicated age-specific calculation. However, this step amounts to a double-counting of adult mortality. By incorporating this, the New Colony approach effectively treats the new colony as if it existed in isolation from the wider kittiwake population. However, in reality, it will be subject to immigration and emigration, just as all colonies are, and recruitment of new breeding birds to the colony to replace natural loss of adults is an integral aspect of this which does not require special consideration. Consequently, the additional 'allowance' for adult mortality amounts to double counting of this rate (i.e. effectively adult mortality is doubled in the Hornsea Three calculations), whereas this is already present in the demographic rates upon which the calculations are based. Thus, the Hornsea Three approach is considered to result in an overestimation of compensation quantum and is regarded by the Applicants to be unnecessarily complex. More details are provided on the Applicants' position regarding compensation quantum in **Precaution in the Ornithology Assessment and Implications for Compensation Quantum** [REP3-030].

106. The Applicants therefore consider that the level of compensation required (not taking into account any compensation ratio) should be based on the Hornsea Four approach which derives a compensation requirement of 278 to 510 kittiwake pairs per annum (upper 95% CI 548 to 1,007 kittiwake pairs per annum).

107. The Applicants have put forward compensation measures that could be scaled to deliver the full range of estimates presented in **Table 5-1.** While compensation delivered via offshore ANS can theoretically be scaled to an immoderate upper limit, the Applicants must take account of a demanding delivery programme, economic feasibility, supply chains and installation vessel availability.

108. The Applicants met with Natural England on 28th May 2025 with the aim of reaching a mutually agreeable position regarding a compensation quantum approach. Discussions confirmed Natural England's position that the scale of the compensation measure (i.e. the ANS nesting space capacity) should be aligned with the 95% UCI to ensure the measure is capable of delivering sufficient compensation should the impact be greater than the mean impact, while the success of the measure should be determined by the mean figure (Appendix G4 to the Natural England Deadline 4 Submission - Natural England's comments and updated advice on Offshore Ornithology [REP4-124]).

109. The exact quantum of compensation required to be delivered by the Projects will be determined as part of the SoS consent decision. The Applicants consider it important that this decision seeks to avoid the likelihood of over-compensating for the predicted impacts of the Projects at the risk of eroding compensation opportunities for future projects.

Table 5-1 Combined Impact Of The Project's Based on Mean Collision Risk Modelling Values (95% Upper CI) And The Predicted Level Of Compensation Required Calculated Using The Hornsea Three And Hornsea Four Approaches. Note that values have been presented based on different breeding season impacts estimated assuming 53% of birds present were adults and also 100%. Values for 1:1, 2:1 and 3:1 presented.

Site	**Annual FFC SPA Apportioned Impact (individuals)**		**Hornsea Four Approach – numbers of pairs required to offset impact**		**Hornsea Three Approach – numbers of pairs required to offset impact**	
	Assuming 53% adult birds	Assuming 100% adult birds	Assuming 53% adult birds	Assuming 100% adult birds	Assuming 53% adult birds	Assuming 100% adult birds
DBS East	46 (93)	84 (169)	123 (248)	224 (452)	254 (513)	463 (936)
DBS West	58 (150)	107 (278)	156 (401)	286 (741)	322 (830)	593 (1535)

Total (DBS East + DBS West)	104 (205)	191 (377)	278 (548)	510 (1007)	576 (1134)	1056 (2086)
Total 2:1			556 (1,096)	1,021 (2,015)	1,152 (2,268)	2,112 (4,172)
Total 3:1			834 (1,644)	1,530 (3,021)	1,728 (3,402)	3,168 (6,258)

5.2 Round 4 Plan

110. To inform calculations of the level of compensation required for the Round 4 Plan, the Kittiwake Steering Group proposed an 'envelope approach' to generate upper and lower estimates of the compensation population based on preliminary collision risk modelling results presented in the **Volume 6, KSCP** [APP-053]. The lower and upper estimates of the combined predicted impact of DBS East, DBS West and Outer Dowsing were agreed by the Kittiwake Steering Group in relation to an offshore ANS (which is considered to be the most viable measure to compensate for the predicted impacts of the Round 4 Plan) to be 2,500 and 5,500 nesting spaces, respectively.

111. Using the Hornsea Four and Hornsea Three approaches outlined above, Outer Dowsing OWF has calculated its compensation requirement to be 42 (Hornsea Four mean) and 207 (Hornsea Three 95% UCI) breeding pairs[6], respectively (ODOW, 2024a; Natural England, 2025). Considering these estimates and those presented in **Table 5-1**, the combined predicted impact of DBS East, DBS West and Outer Dowsing ranges from 320 to 2,293 pairs per annum depending on the proportion of adults assumed during the breeding season, whether means or upper 95% CI is considered and which approach is used (Hornsea Three or Hornsea Four) to derive the values. This range falls below or around the lower limit of the 'compensation envelope' presented within **Volume 6, KSCP** [APP-053] indicating that this, which does not take into account a compensation ratio, is likely to be highly conservative.

5.3 Compensation Ratios

112. **Volume 6, KSCP** [APP-053] states that "*based on the provision of an offshore [Strategic] ANS of the scale proposed, and in line with the potential locations discussed below, a ratio of above 1:1 is proposed*". However, no specific compensation ratio is applied to determine the overall scale of compensation potentially required by the Round 4 Plan as there remain several factors still to be refined and agreed by the Kittiwake Steering Group and which may have a bearing on what would be considered an appropriate ratio. However, **Volume 6, KSCP** [APP-053] does state that the final compensation quantum would fall within the 'compensation envelope' outlined above.

113. Natural England's position as outlined in REP4-124 is that they "recognise that using the 95% UCI impact value can, in combination with use of greater ratios, result in large compensation quanta for some species, and that therefore a pragmatic interpretation of these calculations may be needed. For example, where a compensation case for a project with a substantial quantum is well detailed and has good prospects of success, a case could be made that where the Hornsea 3 approach is adopted, it is unnecessary to then adopt both the 95% UCL impact value and a ratio higher than 2:1 to adequately account for uncertainty."

[6] These estimates are based on the summed mean peak bio-seasonal occurrence. The proportion of adults within the population is defined using adult proportions from the from the site-specific Digital Aerial Survey (DAS) data, with birds apportioned to the FFC SPA using the NatureScot apportioning method and including offshore breeding birds, as agreed with Natural England.

114. Following the completion of geophysical surveys, ongoing stakeholder engagement, selection of an ANS location, marine licence application submission, seabed lease application progression, a defined position on quantum and an updated **Outline Kittiwake CIMP (Revision 2)** [REP4-022] submitted during examination, the Applicants consider their compensation case to be both advanced and comprehensive. Furthermore, the Applicants are providing additional confidence in the provision of the required compensation and offsetting of mortality debt via delivery of the existing onshore ANS at Gateshead, as well as shared nesting spaced on Outer Dowsing's offshore ANS. The progressed nature of the Applicants kittiwake compensation package was confirmed by Natural England during a meeting between both parties on 28th May 2025. As such, the Applicants consider a 2:1 ratio to be suitably cautious whichever calculation method is applied to determine compensation quantum. This is especially relevant when employing a 100% adult apportionment rate, an extreme worst-case assumption which applies precaution beyond the bounds of demographic studies which suggest that 53% apportionment of breeding adults is more appropriate (see **Precaution in the Ornithology Assessment and Implications for Compensation Quantum** [REP3-030]).

115. The Applicants have also sought to align this project-level compensation plan with **Volume 6, KSCP** [APP-053] as far as possible in accordance with their AfL conditions. In light of this, it is proposed that a compensation ratio of 2:1 be applied to the Projects predicted impacts. The overall compensation quantum required to offset the predicted impacts of the Projects[7] would therefore be 556 to 1,021 kittiwake pairs per annum (upper 95% CI 1,096 to 2,015 kittiwake pairs per annum) using the Hornsea Four approach, with 100% breeding adult apportioning.

116. Based on the Hornsea Four approach and assuming the same compensation ratio (2:1), Outer Dowsing's predicted impact is estimated to be 84 breeding pairs (mean) (ODOW, 2024a). Therefore, the overall compensation requirement for the Round 4 Plan would be 640 to 1,105 kittiwake pairs per annum (upper 95% CI 1,179 to 2,099 kittiwake pairs per annum), which remains below the lower limit of the 'compensation envelope' presented in section 8.2 **Volume 6, KSCP** [APP-053].

[7] Based on the Hornsea Four approach and assuming either 53% or 100% of birds present during the breeding season were adults.

117. Based on the Hornsea Three approach and assuming the same compensation ratio (2:1), Natural England consider Outer Dowsing's compensation requirement to be 542 breeding pairs of kittiwake (upper 95% CI) (Natural England, 2025). This figure combined with the compensation requirement of 4,172 for the Projects (calculated using the same method) results in an overall compensation requirement of 4,714 nesting spaces for the Round 4 projects. This lies within the 'compensation envelope' of 2,500 and 5,500 nesting spaces as outlined in **Volume 6, KSCP** [APP-053].

6 Compensatory Measures

6.1 Overview

118. **Table 6-1** provides an overview of the compensatory measures proposed by the Applicants for kittiwake and the delivery options available for each measure. The principal compensatory measures include the management of fisheries to increase prey availability and offshore ANS. It is considered that each of these measures is capable of fully compensating for the predicted impacts of the Projects and therefore only one would be required to deliver the necessary level of compensation for the Projects.

119. The Applicants' preferred compensation measure is the management of fisheries to increase prey availability which can only be delivered strategically by the UK Government. However, as outlined in section 3.1.1 there is uncertainty as to whether this strategic option is available to compensate for the predicted impacts of the Round 4 plan and the Projects specifically. Thus, offshore ANS is proposed as an alternative option which could be delivered via several mechanisms including strategically, collaboratively and on a project-led basis.

120. As evidenced by the SoS's decision for the Hornsea Four Project, offshore ANS is an accepted compensation measure for FFC SPA kittiwake and has also recently been approved as a strategic compensatory measure (Defra, 2024a). Two ANS have already been installed by the Hornsea Three Project in the nearshore environment and further offshore structures are expected to be implemented by the Hornsea Four Project in the coming years in accordance with their DCO. Considering this alongside the evidence provided in **Volume 6, KSCP** [APP-053] and summarised in section 6.3 below, offshore ANS is considered to be both feasible and implementable. Offshore ANS is therefore being taken forward by the Applicants as the principal compensatory measure for kittiwake.

121. In October 2022, the Applicants applied for planning permission to install a single onshore ANS on the River Tyne, adjacent to an existing kittiwake nesting structure (known as the Saltmeadows tower) at Gateshead. This scheme was pursued in anticipation of the Projects' potential requirement to deliver kittiwake compensation. At the time, several OWF Projects had been consented with onshore ANS as a compensation measure for kittiwake and therefore it was considered a viable option that could potentially deliver all or part of the Projects' compensation needs. The Applicants took a proactive approach, seeking to develop an onshore ANS in advance of DCO application, to maximise the time available for this structure to become functioning and contribute to the coherence of the UK NSN before any impact from the Projects occurred. Planning was granted in December 2022 and the structure was installed in February 2023.

122. Whilst the Kittiwake Steering Group acknowledge that onshore ANS has merit as a compensation measure, concerns have been raised regarding the ecological evidence and lack of certainty in the effectiveness of further onshore ANS (in addition to those already implemented or in planning) (**Volume 6, KSCP** [APP-053]). As such, the Kittiwake Steering Groups preference is for offshore ANS over onshore ANS as a strategic compensation measure for the Round 4 Plan.

123. Furthermore, the Applicants understand that whilst Natural England does not typically support onshore ANS for kittiwake, it is considered acceptable and a proportionate option for OWF projects where they are predicted to have only a small impact. Based on the current capacity of the Applicants onshore ANS at Gateshead and the predicted impacts of the Projects outlined in section 4.4.1, this structure is unlikely to be capable of fully delivering the necessary level of compensation.

124. In light of this and feedback from the Kittiwake Steering Group and ETG members, the Applicants' existing onshore ANS located on the River Tyne, Gateshead is proposed as a supporting or adaptive management measure rather than a primary compensatory measure. This option could be relied upon either as compensation or adaptive management to, for example, discharge a proportion of the Projects' derogation requirements should any issues arise with respect to the primary compensation measure taken forward. It is therefore considered to add resilience to the Applicants' overall compensation proposal for kittiwake. It is acknowledged that other OWF developers have an interest in this structure in potentially delivering their own compensation needs for kittiwake – this is discussed in section 6.4.3 below.

125. Given the significant work that is being undertaken by industry and Government to develop strategic compensation options for offshore wind (see section 1.2), the Applicants consider it possible that alternative strategic options to offshore ANS may become available either as compensation or adaptive management within the timescales of the Projects. Given the strategic nature of such options, it is likely that these would be capable of fully compensating for the predicted impacts of the Projects. However, given the uncertainty with respect to the nature of these measures and if/when they may become available, this option is only included as a supporting or adaptive management measure and is not considered further in this plan.

126. The remaining measures outlined in **Table 6-1** are discussed in further detail within the subsequent sections, in accordance with the Natural England checklist (see section 2.2) where appropriate.

Table 6-1 Summary of Compensatory Measures For Kittiwake and The Associated Delivery Options

Measure	Strategically	Collaboratively	Project-led
Primary measures			
Management of fisheries to in-crease prey availability	✓	×	×
Offshore ANS	✓	✓	✓
Supporting / adaptive management measures			
Existing onshore ANS at Gateshead	×	✓	✓
Alternative strategic options	✓	×	×

6.2 Management of Fisheries to Increase Prey Availability

6.2.1 Overview

127. During the breeding season kittiwake at most colonies around the North Sea feed on small shoaling fish near the surface of the water column, including sandeel, sprat and juvenile herring (Furness and Tasker, 2000; Coulson, 2011). Sandeel abundance has been found to strongly influence breeding success of kittiwakes (Frederiksen *et al.* 2004; Cury *et al.* 2011; Carroll *et al.* 2017; Christensen-Dalsgaard *et al.* 2018), which in turn influences breeding numbers at nearby kittiwake colonies (Monnat *et al.* 1990; Cadiou *et al.* 1994; Coulson 2011, 2017).

128. Recent and current OWF consent applications provide extensive evidence that measures to increase the abundance of sandeels can be expected to provide several benefits for kittiwake colonies including increased breeding success, adult survival, and breeding numbers (MacArthur Green, 2022a; 2022b; SSE, 2023). Thus, such measures are considered to be a targeted and highly effective means of compensating for the predicted impacts of offshore wind projects.

129. Fishing of sandeels is one of the main factors that reduces the abundance of sandeels in the North Sea (Lindegren *et al.* 2018 and reviewed in MacArthur Green, 2022a). Ecopath-Ecosim ecosystem modelling (Bayes and Kharadi 2022) concluded that a closure of the sandeel fishery in the North Sea would lead to a 40% increase in the biomass of the sandeel stock and a 42% increase in the number of seabirds dependant on this prey resource within the first 10 to15 years after closure of the sandeel fishery (Bayes and Kharadi, 2022). Further evidence to support the assertion that management of fisheries to increase prey availability is considered by the Kittiwake Steering Group and the Applicants to be the most ecologically effective means of increasing breeding success and therefore populations of kittiwake.

130. With respect to draft Defra guidance (Defra, 2021), this compensatory measure is consistent with the top level of the compensation hierarchy as it would benefit the same feature that is impacted by the Projects (FFC SPA kittiwake). The Applicants are confident that this measure would be effective in delivering vastly more compensation than required by the Projects and other UK OWF project proposals, even under the most precautionary estimates of losses and would support the conservation objectives for the site and the overall coherence of the UK NSN.

6.2.2 Delivery Mechanism

131. Several potential delivery mechanisms have been explored to date (Ørsted, 2021; MacArthur Green, 2022b; 2022c; Equinor, 2022), however; these require changes to ICES fisheries management practices with a great focus on 'ecosystem-based management' or Defra to legislate to reduce fishing pressure on sandeels in UK waters as strategic compensation.

132. As outlined in section 3.1.1 and **Volume 6, KSCP** [APP-053], Defra ran a public consultation from 7th March 2023 to 30th May 2023 to gather views on the management measures of industrial sandeel fishing in English waters of the North Sea. This consultation considered the closure of the sandeel fishery for ecological purposes rather than to deliver compensation for offshore wind.

133. This consultation considered several potential delivery mechanisms including:

- Full closure of English waters within the North Sea. This option would see full closure of industrial sandeel fishing within the English waters of SA 1 r, SA3r and SA4.
- Closure of English waters within SA4 and SA3r. This option would be a partial closure in English waters, with industrial fishing prohibited in English areas of SA4 and SA3r; and
- Closure of English waters within SA 1 r. This option would be a partial closure in English waters, with industrial fishing prohibited in English area of SA1r.

134. In January 2024, Defra announced that effective from 1st April 2024, the UK Government would permanently close sandeel fisheries in English waters of the North Sea. As such, there is potential that the management of fisheries to increase prey availability may not be an available compensation option for Round 4; however, no formal announcement has been made by Defra with respect to this. The EU has also recently challenged the compatibility of the fisheries closures with the EU-UK Trade and Cooperation Agreement (see section 3.1.2) which casts further doubt on the viability of this measure as compensation for OWFs.

135. Notwithstanding this, there is still considered to be some prospect that fisheries management to increase prey availability could be delivered strategically as compensation for offshore wind. Thus, this measure has been put forward as part of the Applicants project level compensation proposal in accordance with **Volume 6, KSCP** [APP-053] and an option for the Projects to pay a financial contribution towards the management of fisheries to increase prey availability as a strategic compensation measure has been included in **Volume 3, Draft DCO (Revision 10)** [REP8-003].

136. The scale of fisheries management required to compensate for the predicted impact of the Projects would be assessed following confirmation from Defra that this measure is viable (i.e. the UK Government indicates an appetite to deliver fisheries management as compensation for offshore wind) and deliverable within the relevant timescales. The assessment of the required compensation quantum would be undertaken in consultation with the Kittiwake Steering Group to align with the level of compensation required at the plan level for the Projects.

6.3 Offshore ANS

6.3.1 Overview

137. UK kittiwake populations have experienced considerable decline over the last 40 years, with an overall decline of 55% since 1985. Whilst English colonies have remained relatively stable over the last 21 years (2000 – 2021), substantial declines have been observed at Scottish, Welsh, and Irish colonies (Burnell *et al*. 2023). As outlined above, there is good evidence to suggest that the decline in UK kittiwake populations is likely to have been driven by low breeding productivity related in turn to changes in sandeel populations (Frederiksen *et al*. 2005; Coulson, 2017).

138. Offshore ANS aim to increase the productivity of kittiwake within the species' biogeographic range by providing additional nesting space within the vicinity of productive foraging grounds to encourage the creation of a new offshore colony.

139. As evidenced in section 5.3 of **Volume 6, KSCP** [APP-053], kittiwakes are known to readily utilise man-made structures for nesting both onshore and offshore (NIRAS, 2020; MacArthur Green, 2021a; 2021b; MacArthur Green and Royal HaskoningDHV, 2022; Niras, 2021a and 2021b; MacArthur Green, 2022a). Although to date, no offshore ANS have been implemented specifically for this purpose, there are successful examples of onshore structures (e.g. Saltmeadows tower in Gateshead). ANS both onshore and nearshore have been installed in recent years for the purpose of delivering compensation although the efficacy of these is still to be established (Ørsted, 2023; Vattenfall, 2023).

140. Kittiwakes have, however, been recorded successfully breeding offshore on platforms in the Norwegian Sea, North Sea, and Dutch North Sea since the early 1990s (Unwin, 1999; Christensen-Dalsgaard *et al*. 2019). The presence of breeding kittiwakes has been established on at least 100 oil and gas rigs in northern European waters although only 26 are currently known to support established breeding kittiwake colonies (Ørsted, 2021 and references therein). To support the proposal of offshore ANS as a viable compensation measure, several OWF developers have recently undertaken surveys to increase the evidence base regarding the extent of kittiwake breeding on offshore structures in the southern North Sea.

141. During the 2021 breeding season, Ørsted commissioned a series of boat-based and aerial surveys to better understand the status of breeding pairs on offshore installations in the North Sea (NIRAS, 2021b). These surveys identified the presence of nine breeding colonies in the southern North Sea which combined, were estimated to support at least 1,500 breeding pairs (Ørsted, 2021). A further 12 offshore installations were observed to support roosting populations, breeding was suspected at two of these but could not be confirmed.

142. To build on the evidence base provided by Ørsted (2021), ODOW completed surveys of breeding kittiwake populations in the southern North Sea in summer 2022 and 2023 (ODOW, 2024b). Boat-based surveys of 17 offshore installations within a 20km radius of the proposed Outer Dowsing array areas found that six offshore installations supported nests each year.

143. In addition to the above investigations, an aerial survey of offshore installations was undertaken by the Applicants in 2022 to assess the presence of kittiwake colonies within the vicinity of the DBS array areas. Of the 13 offshore oil and gas installations surveyed, kittiwake populations were present at five and evidence of breeding colonies was observed at a further four sites (RWE, 2022a).

144. The data collected by OWF developers in the North Sea supports the understanding that kittiwake colonise offshore structures and where environmental conditions are suitable, can breed successfully on these structures.

145. There are several advantages to establishing colonies offshore for kittiwake. Firstly, predation levels are likely to be lower on isolated offshore structures (e.g. oil rigs) compared with natural coastal breeding sites (Christensen-Dalsgaard *et al.* 2019). Secondly, breeding birds are likely to be located much closer to foraging grounds, thus reducing energy expenditure and increasing foraging efficiency compared to birds breeding onshore. Thirdly, there is evidence that breeding success may be reduced at large coastal colonies as a result of increased competition for high-quality nest sites and food in the surrounding coastal waters (Acker *et al.* 2017; Wakefield *et al.* 2017). The combined effect of these factors is that breeding success at offshore colonies has been found to be higher than breeding colonies on natural cliffs (Christensen-Dalsgaard *et al.* 2019). Similarly, higher mean productivity has been observed at urban artificial nesting sites (e.g. in Scarborough, North Yorkshire) compared with nearby nesting sites on natural cliffs (RWE Renewables UK, 2024). Predation risk can be further reduced on both onshore and offshore purpose-built structures through specific design considerations to prevent large gull roosters and reduce exposure to adverse weather conditions.

146. Growth patterns of kittiwake colonies at offshore installations are understood to reflect those observed at natural nesting sites (Ørsted, 2021). The size of the annual pool of breeding kittiwake available for recruitment to new offshore structures can be estimated by observing local populations at established colonies – in the case of the Projects, this is primarily the FFC SPA population.

147. Though the size and pool of kittiwake recruits available in the North Sea are uncertain (Ruffino *et al.* 2020), OWF developers have made estimates based on the best available data. ODOW calculated the potential pool of kittiwake recruits by considering the local breeding population size within exploratory range of an ANS in the North Sea, dispersal rates, local productivity rates, survival rates to breeding age and colony population maintenance as a consequence of natural mortality and current colony growth rate (ODOW, 2024b). It was determined that using a low estimate of the natal dispersal rate (64%), the colony size of FFC SPA (39,653 AONs), and a standard rate of productivity (0.819) the colony may produce up to 20,785 prospecting juveniles per annum that could potentially be recruited to an offshore ANS within dispersal range. Note that this potential population available for recruitment only includes kittiwake from FFC SPA. Therefore, prospecting juveniles from other colonies such as those established on offshore oil and gas installations, and from other North Sea coast populations represent additional pools for recruitment.

148. Estimations of recruitment potential have also been undertaken by Ørsted for the Hornsea Four Project (Ørsted, 2021). The potential production of breeding juveniles at SPA sites on the North Sea coast was calculated under a range of philopatry scenarios (low, medium, and high). This assessment concluded that the largest SPA colonies could produce several thousand recruiting breeders annually, regardless of philopatry rate. For example, Flamborough Head estimations ranged from >1,000 in the most conservative prediction to >20,000 individuals in 2030 under an optimistic scenario.

149. The approaches taken in calculating the pool of potential recruits for offshore ANS by developers are relatively simple and depend on a range of assumptions. However, some broad conclusions can be made. Firstly, there is an annual input of juvenile kittiwakes that will survive to breeding age (three to four years) within the southern North Sea. Secondly, under the assumption that nesting preferences at coastal colonies including FFC SPA are reflected in conditions provided by offshore ANS, then ANS within prospecting distance of established kittiwake colonies (within 100km of their natal colony) have the potential to provide large numbers of recruits annually.

150. The chances of success for offshore ANS as a compensatory measure for kittiwake with good design and siting are considered by the Applicants to be high. This is supported by the inclusion of the measure as a preferred option in **Volume 6, KSCP** [APP-053] and demonstrated by ecological evidence presented in this plan and by other OWF developers (Ørsted, 2021; ODOW, 2024b).

6.3.2 Scale

151. In accordance with **Volume 6, KSCP** [APP-053], the provision of offshore ANS is secured within the **Draft DCO (Revision 10)** [REP8-003]. To account for predicted impacts of the Round 4 offshore wind projects requiring compensatory measures for FFC SPA kittiwake combined (ODOW and the Applicants), two structures will accommodate the predicted upper limit of compensation required at the plan level. These two structures, would accommodate the predicted upper limit of compensation required at the plan level for DBS West, DBS East and Outer Dowsing (see section 5.2) and more than compensate for even the most precautionary collision risk estimates for the Projects (see section 5.1). The impact of the Projects on adult kittiwakes from FFC SPA is estimated to be 104 to 191 birds per year (depending on the percentage of adult kittiwake proportions applied to the breeding season impact), with an upper 95% CI of 205 to 377 birds per year.

152. Should one or more of the three projects (DBS West, DBS East or Outer Dowsing) not proceed, **Volume 6, KSCP** [APP-053] outlines that the number of structures required would be reviewed in light of the anticipated reduction in predicted collisions.

153. The topside structure design is scalable until the point of construction, meaning that the number of nesting spaces can be increased as required depending on the final compensation quantum decision as will be made by the SoS. However, should the ANS need to scaled beyond the upper limit of the current design base case, the Projects would be likely to incur significant programme delays and risk to the economic viability of the scheme.

154. While the ANS can be designed to accommodate the worst-case impact scenario using the Hornsea 3 methodology, the 95% UCI with 100% apportioning to the adult population (see **Table 5-1**), this scenario is considered to be highly precautionary. The Applicants assert that this compensation quantum figure does not reflect the most likely kittiwake impact associated with the Projects. More details are provided on the Applicants' position regarding compensation quantum in **Precaution in the Ornithology Assessment and Implications for Compensation Quantum** [REP3-030].

6.3.3 Delivery Mechanism

155. The Applicants, in collaboration with ODOW propose to deliver two offshore ANS via the following mechanisms:

- A single project-led ANS developed by the Applicants.

- A single ANS developed by ODOW.

156. A Memorandum of Understanding (MoU) for a collaboration agreement in relation to the development, construction, operation and decommissioning of ANS sites in the North Sea between the Applicants and ODOW has been finalised and signed by both parties. This document sets out the terms for collaboration, and each party's commitment to sharing nesting spaces and compensation benefits attached to each occupied space. The MoU also sets out both parties' interests in collaborating in the design, development and implementation of respective ANSs which has facilitated discussions with regard to logistic operations in connection with the construction and maintenance of the structures. This approach provides reciprocal resilience across the compensation measure. This will enable both the Applicants and ODOW to deliver the strategic measure and approach in line with the **Volume 6, KSCP** [APP-053], collaboratively through the installation of individual project-led ANS. This approach aligns with DESNZ guidance (DESNZ, 2025b) which states "*Where possible, applicants should work collaboratively to ensure that larger and fewer offshore ANSs are placed in optimal sites*".

157. There are operational examples of collaborative compensation delivery for example, the Norfolk Projects (Norfolk Boreas and Norfolk Vanguard) and East Anglia ONE North and TWO Project's onshore ANS project at Lowestoft (Vattenfall, 2022) which demonstrates that ANS implementation via this mechanism can be secured and delivered.

158. The Applicants will provide sufficient quantum of compensation for kittiwake in a single ANS which they will develop. However, it is noted that collaborative delivery is one of the mechanisms proposed in **Volume 6, KSCP** [APP-053] therefore engagement with other OWF developers both through the Kittiwake Steering Group and directly with other developers has been undertaken during the pre-application stage to explore opportunities for collaboration between the Applicants, ODOW and other OWF developers. This approach aligns with the preference expressed by the Defra SoS (Defra, 2024a) for 'developers to work collaboratively to ensure larger (and likely, fewer) towers are placed in optimal sites within English Waters'.

159. An MoU has now been signed by the Applicants and ODOW, though this document has not been disclosed due to the commercially sensitive nature of the content. However, the Applicants have submitted a Letter of Intent alongside this plan and have provided details of consultation with other developers in section 3.3 to demonstrate the positive direction of travel with respect to collaborative discussions between the Applicants and ODOW (see **Volume 6, Collaborative Delivery of Kittiwake Compensation: Letter of Intent** [APP-055]). Should reciprocal shares of compensation benefit be taken forward, it is noted that ODOW has included for the potential for an ANS within their DCO application which is currently undergoing determination following the completion of their DCO examination. The Applicants will provide updates through their DCO examination. The MoU between ODOW and the Applicants details apportionment of nesting spaces on the respective offshore ANS and provides details of how the collaboration will work in practice. Such information will be provided in updates to the Kittiwake CIMP as appropriate.

160. In the event that the ODOW project does not proceed, and no other prospective collaborative partners come forward the Applicants would still have provided enough nesting capacity through its own project-led ANS to fulfil the compensation requirements.

161. An alternative option for the delivery of an ANS should the ODOW-led collaborative measure not proceed is the strategic delivery of offshore ANS via a Strategic Compensation Fund such as the MRF. The MRF is an optional mechanism through which strategic compensation measures such as offshore ANS provision will be available to developers. This fund is expected to be operational in 2025 and is therefore considered to be a viable delivery mechanism that could be relied upon to deliver offshore ANS either wholly or partly in substitution of collaborative or project-led options or as part of an adaptive management approach.

162. In addition to identifying a project-led site suitable for the installation of an offshore ANS, the Applicants are in discussions with other developers in relation to sharing the benefit of HRA compensation for kittiwake on a strategic basis. Discussions have included the potential for the Applicants to take on the design and installation works previously undertaken by Hornsea Project Four. Should this be taken forward by the Applicants it is noted that Hornsea Project Four has progressed the ANS with respect of design, licences and agreements, and has confirmed a willingness to facilitate offshore ANSs where feasible. The Applicants will provide updates on these discussions throughout the examination phase.

163. The information presented above outlines how offshore ANS can be secured and demonstrates that several mechanisms for delivery are available to the Applicants and can be implemented. The Applicants **Outline Kittiwake CIMP (Revision 2)** [REP4-022] sets out the detailed delivery proposals for the agreed project-led compensatory measures based on those set out in this Project Level Kittiwake Compensation Plan. The **Outline Kittiwake CIMP (Revision 2)** [REP4-022] is being updated during DCO Examination upon request from Natural England and the Examining Authority. The finalised Kittiwake CIMP will be approved by the SoS prior to the start of the offshore works. ODOW will also produce a kittiwake CIMP detailing the design and delivery aspects of their offshore ANS. Details regarding the apportionment of nesting spaces between the Applicants and ODOW on the ODOW-led ANS will be provided in the finalised version of this document.

164. Further information regarding the proposed location, design and implementation timescales for the project-led option are detailed in **Project-level Artificial Nesting Structure (ANS) Site Selection Report (Revision 2)** [REP8-035] and sections 6.3.4 to 6.3.8 below.

6.3.4 Location

165. As outlined in section 9 and Appendix D of **Volume 6, KSCP** [APP-053], NIRAS on behalf of The Crown Estate, undertook a site selection process in consultation with the Kittiwake Steering Group to identify a long list of candidate areas of search (AoS) for installation of ANS both onshore and offshore in English, North Sea waters. This exercise aimed to identify AoS that were ecologically suitable and technically feasible (i.e. avoided 'hard constraints'). Ecological suitability was assessed by taking account of several factors that were deemed critical or would help optimise the likely success of the measure. These included:

- Proximity to foraging areas e.g. tidal mixing fronts and areas of high predicted prey (i.e. sandeel) abundance.
- Proximity to small (<5,000 pairs) existing kittiwake colonies i.e. to attract prospective birds whilst minimising competition for resources.
- Avoidance of areas where intraspecific competition is likely to be high (e.g. intense foraging areas for kittiwakes in UK waters).
- Likelihood of exchange with FFC SPA population while avoiding direct competition for resources i.e. within 100km of FFC SPA (Coulson, 2011) but not overlapping with the mean (core) foraging range from the SPA.

166. Density dependent factors are influential on colony foraging patterns for kittiwake (Wakefield *et al.*, 2017). Therefore, the foraging habits of neighbouring colonies are important to consider when looking to locate an ANS while minimising inter-colony competition. The Applicants have considered the location of key foraging areas for FFC SPA kittiwake to maximise the chances of success for the ANS colony, as well as reduce competition with the existing population. Predictive modelling informed by seabird tracking from FFC SPA (Cleasby *et al.*, 2020; Wakefield *et al.*, 2017) was utilised by NIRAS when developing ecological suitability scores that have been used by the Applicants as a guidance tool to support the site selection process. Further to this, when assessing site suitability, the Applicants followed principles set out in Appendix D of **Volume 6, KSCP** [APP-053] that the offshore ANS should ideally be 55km to 100km from the FFC colony to avoid the core foraging range for FFC SPA kittiwake, while maintaining connectivity to allow colony interchange. The Applicants have also reviewed data from RSPB (2017) as part of the site selection process and have sought to avoid areas with the highest utilisation distribution, though acknowledge limitations of this data which include a limited sample size, and data bias due to battery capability of the trackers.

167. Hard constraints included existing infrastructure or activities where the seabed is already occupied and therefore not available (e.g. oil and gas platforms, cables and pipelines, aggregates, OWFs, protected monuments and wrecks, navigational channels, military areas etc.). A full list is presented in Appendix D of the **Volume 6, KSCP** [APP-053].

168. **Figure 6-1** presents the six offshore AoS identified by NIRAS which are of relevance to this compensatory measure, and a further five offshore AoS that were considered within **Volume 6, KSCP** [APP-053]. Four of these were proposed by ODOW, two of which have been taken forward within their DCO application as possible locations for the siting of two offshore ANS (ODOW, 2024b). The remaining AoS represents the proposed location[8] for a further two offshore ANS which the Hornsea Four Project is required to deliver in accordance with its DCO. The purpose of outlining the AoS proposed by ODOW and Ørsted's Hornsea Four Project is to indicate the potential locations of offshore ANS that could be delivered collaboratively in partnership with the Applicants.

[8] As outlined in MLA/2023/00390 which is still to be decided upon by the MMO. Supporting site selection information can be found in Ørsted (2021).

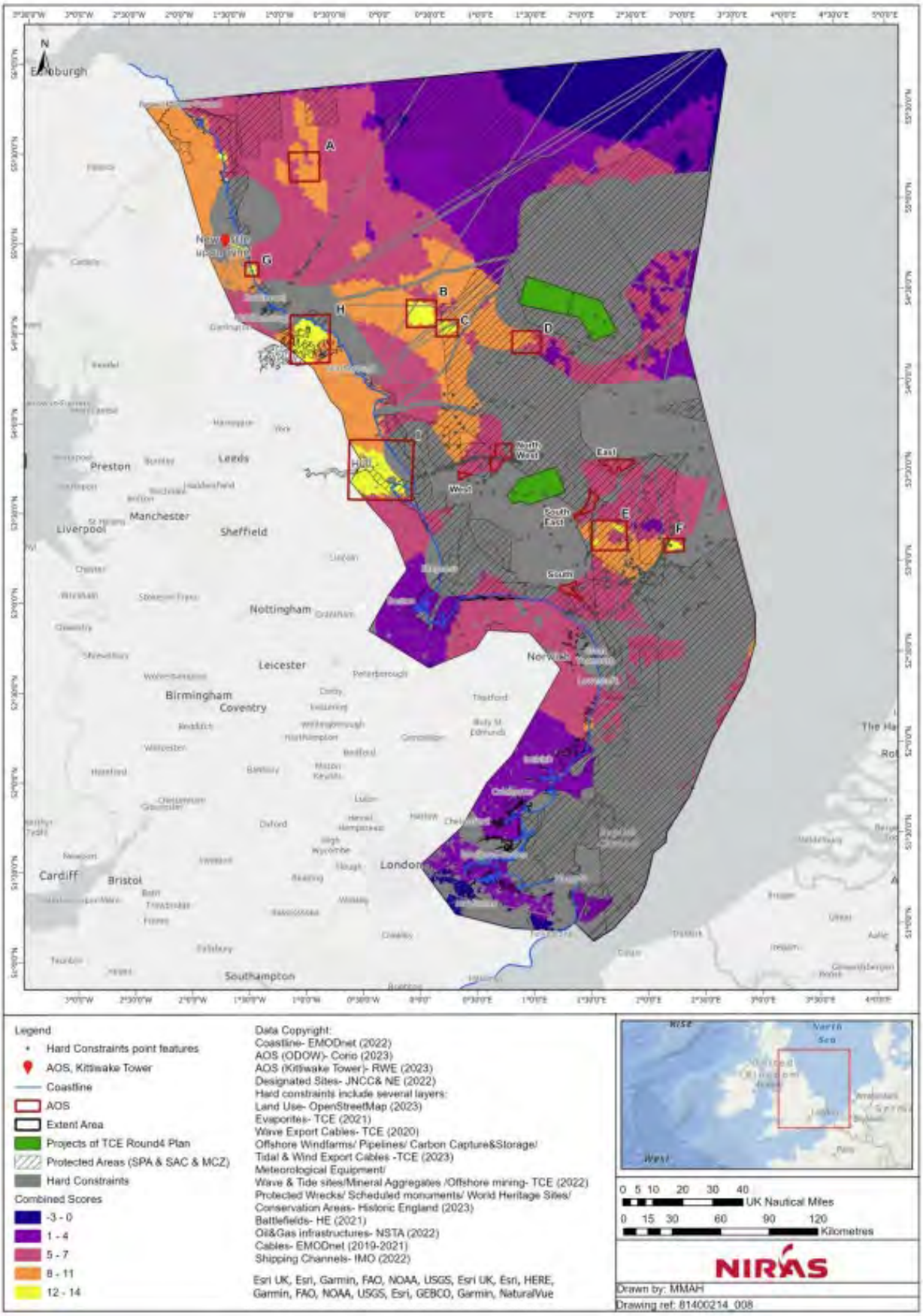


*Figure 6-1 Offshore ANS Areas of Search Presented in V**olume 6, KSCP (APP-053)***

169. Further site selection work has been undertaken to support the Applicants' project-led offshore ANS proposal, building on the initial appraisal undertaken by NIRAS, to take account of additional constraints and identify a short list of AoS.

170. Acknowledging the Kittiwake Steering Group's preference for the construction of two offshore ANS at two different locations (in order to maximise likely success), this further appraisal work has focused on offshore AoS.

171. The first stage of site selection work undertaken by the Applicants to identify suitable locations for project-led offshore ANS was to appraise a longlist of areas of search (AoS) identified by NIRAS and ODOW in Appendix D, **Volume 6 KSCP** [APP-053]. One of the primary outcomes of the first stage of site selection work was the exclusion of AoS on the basis that several of those assessed were located in prohibitive water depths for a fixed base structure and / or located in areas of high vessel density (shipping traffic). It was concluded that a shortlist of five AoS would be subject to further investigations to assess site suitability.

172. Following the submission of **Appendix 1 – Project Level Kittiwake Compensation Plan (Revision 1)** [APP-052] in June 2024, a review of the shortlisted AoS and data sources was undertaken. It concluded that while the five shortlisted candidate AoS had merit, they remained potentially constrained by physical conditions, soft constraints, as well as technical and logistical challenges, and that the Applicants may have limited options if only these sites were considered. An examination of the wider area of search (English waters of the southern North Sea) suggested that there may have been missed opportunities at locations with good ecological suitability that were not identified previously in **Volume 6, KSCP** [APP-053].

173. As a result, the Applicants undertook a second stage of site selection work with the aim of identifying and assessing the suitability of new AoS for the installation of offshore ANS alongside selected AoS presented in Appendix D **Volume 6, KSCP** [APP-053]. Prior to additional site selection work being progressed, the Applicants took the opportunity to engage with The Crown Estate and outline plans to identify additional AoS for the delivery of ANS, and no objection was raised. In addition to identifying new AoS, the Applicants also assessed the suitability of repurposing offshore infrastructure due to be decommissioned, including oil and gas platforms, as advised by Natural England.

174. The Applicants also assessed the potential of several in situ structures and appraised the suitability of two structures theoretically suitable for repurposing as offshore ANS in greater detail: Garrow gas platform and Scroby Sands OWF. Garrow gas platform was discounted due to a lack of kittiwake presence accompanied by insurmountable concerns regarding the reclassification of a gas structure, commitments to decommissioning, legal liability and health and safety concerns surrounding infrastructure at the end of its designed lifespan. Structures at Scroby Sands OWF were not considered further due to the decommissioning timeline not aligning with the Applicants' ANS installation requirement. Further details on the appraisal of the in situ offshore assets are provided in the **Project Level Artificial Nesting Structure (ANS) Site Selection Report (Revision 2)** [REP8-035].

175. In alignment with the site selection work undertaken by The Crown Estate (2024), AoS newly identified by the Applicants were primarily limited to areas characterised by medium to high ecological potential, in water depths suitable for the installation of fixed-base ANS. Ecological suitability was assessed by taking account of the 'ecological suitability' score as outlined in **Volume 6, KSCP** [APP-053] which ranged from -1 to 14. Where possible, AoS were located in areas where medium to high (5 to 14) ecological suitability scores represented the majority, if not all of the site. New AoS were intentionally large to increase coverage of the seabed to ensure that a range of ground conditions are covered by each site and that there are multiple options for consideration should unsuitable conditions be identified. Socio-economic factors such as fishing activity and vessel density (marine traffic) were also taken into account.

176. Building on earlier site selection work undertaken by the Applicants and as outlined in Appendix D of **Volume 6, KSCP** [APP-053], candidate AoS were also delineated by identifying areas that primarily avoided or minimised interactions with hard constraints and buffers (i.e. were technically deliverable) and had logistical merit. AoS were also concentrated in areas characterised by suitable water depths for the installation of a fixed base structure which following consultation with engineers, for the purposes of the site selection work are considered to be 20 - 50m.

177. Following the identification of new AoS in areas of seabed that were not prohibited by conflicting hard constraints and suboptimal ecological suitability, where possible, boundaries were reviewed and refined to account for physical site conditions such as extensive areas characterised by suboptimal water depths. As part of the boundary review process, newly identified AoS as well as AoS identified by NIRAS and ODOW during the initial site selection work were adjusted to minimise (where possible) overlaps with constraining factors identified during the earlier site selection work. For example, as shown on **Figure 6-2** the boundary for Site F was cropped to remove an intersection with the North Norfolk Sandbanks and Saturn Reef Special Area of Conservation (SAC) following advice from Natural England. The boundary of Site Northwest was redrawn to exclude the southern half of the area as this is where the ODOW structure is planned to be located (while provision for a Marine Licence is included within the ODOW draft DCO as a deemed Marine Licence (dML)), therefore ensuring that the two ANS are not located too close to each other.

178. As a result of additional work undertaken by the Applicants, a total of ten new AoS (Sites 1-10) were identified during the second stage of the site selection work and subjected to detailed constraints assessment. These AoS were assessed along with six sites presented in **Volume 6, KSCP** [APP-053] of which three offshore AoS previously identified by The Crown Estate (2024) and three AoS previously proposed by ODOW and Hornsea Four Project).

179. The purpose of including the AoS proposed by ODOW and Ørsted's Hornsea Four Project was to provide information on the potential locations of offshore ANS that could be delivered collaboratively in partnership with the Applicants. The Hornsea Four Project Marine Licence application (MLA/2023/00390) was granted on 23rd October 2024, while provision for a Marine Licence is included within the ODOW draft DCO as a deemed Marine Licence (dML). Geophysical and geotechnical surveys of the final ANS site, and detailed engineering designs have been undertaken by Hornsea Four while site investigations, consultation and detailed design work are being progressed for ODOW. Discussions surrounding the potential for the Applicants to take on the design and installation works previously undertaken by Hornsea Project Four were previously underway but are no longer being progressed due to uncertainty surrounding the progression of the Hornsea Four project. Any updates regarding collaboration with Hornsea Four will be provided as appropriate throughout examination.

180. Following the identification of potentially suitable AoS, a Black, Red, Amber, Green (BRAG) assessment was undertaken to quantify risks associated with both 'hard' and 'soft' constraints within each site, and to determine the potential viability of candidate locations. A total of 16 AoS were subject to investigation, representing a wider geographic spread of sites than in previous site selection work.

181. A list of the AoS progressed for constraints assessment is presented in **Table 6-2.**

Table 6-2 Areas of Search progressed A list of the AoS progressed for constraints assessment

AoS	Identified by
Sites 1-10	Dogger Bank South
Site D	KSCP (proposed by NIRAS / The Crown Estate)
Site E	KSCP (proposed by NIRAS / The Crown Estate)
Site F	KSCP (proposed by NIRAS / The Crown Estate)
East	KSCP (proposed by ODOW)
Southeast	KSCP (proposed by ODOW)
Northwest	KSCP (proposed by Hornsea Four Project & ODOW)

182. Following the scoring of individual constraints, the combined score for each constraint category within each AoS was calculated. The scores were then ranked and combined which enabled the identification of the most favourable AoS based on the constraints examined.

183. The key constraints driving differences between the AoS included designated sites, the presence of Annex I habitats, water depth (bathymetry), distance of AoS from project-related infrastructure / transit routes / O&M ports, commercial fishing, and shipping activity. These constraints are shown on **Figure 6-2** to **Figure 6-6**.

184. Further details of the site selection process as well as methods employed by the Applicants to identify and appraise potentially suitable AoS for the installation of offshore ANS are provided in the **Project Level Artificial Nesting Structure (ANS) Site Selection Report (Revision 2)** [REP8-035].

185. Following the BRAG assessment, the following AoS were discounted and have not been progressed for further consideration due to constraints present within each site as outlined in detail in section 4.2 of **Project Level Artificial Nesting Structure (ANS) Site Selection Report (Revision 2)** [document reference 10.19]:

- Sites 1-2, 3, 8-10
- Site E
- East
- Southeast

186. Sites 1 – 2 and Site E were primarily discounted due to interactions with protected sites designated for sensitive benthic features (North Norfolk and Saturn Reef SAC) (**Figure 6-3**) while Sites 8, 9 and 10 were discounted due to high marine traffic density within site boundaries (**Figure 6-6**). 'East', 'Southeast' and Site 3 were discounted on the basis of low ecological suitability scores and their isolated locations which would make accessing any ANS challenging and time consuming for monitoring and maintenance purposes (**Figure 6-2**).

187. To streamline the desk-based assessments, certain shortlisted AoS were merged with neighbouring AoS which resulted in five sites being progressed for desk-based assessments. The five shortlisted AoS represent a combination of sites identified by the Applicants, other OWF developers and NIRAS in Appendix D of **Volume 6, KSCP** [APP-053].

188. The five shortlisted AoS subjected to further desk-based assessments were:

- Site 4
- Site 5 (which included Site D)
- Site 6 (which included Site 7)
- Site F
- Northwest

189. A map illustrating all 16 of the AoS assessed, as well as the five shortlisted AoS is shown on **Figure 6-2** alongside hard constraints and the ecological suitability score data as generated by NIRAS on behalf of The Crown Estate for **Volume 6, KSCP** [APP-053].

190. The next stage of the site selection process was to undertake a more detailed technical assessment of certain constraints.

191. As well as establishing further constraints and stakeholder interactions, desk-based assessments have allowed refinement of the AoS by identifying areas with suitable conditions for ANS development, and eliminating areas where conditions are unfavourable. It should be noted that while most assessments have been completed (shipping and navigation assessment; ground conditions study, unexploded ordnance (UXO) risk analysis), others remain ongoing. The single desk-based assessment that is underway but yet to be completed (hindcast metocean study) is not considered essential for the identification of and next stages of delivering the final AoS site.

40. The appraisal of the shortlisted AoS has been undertaken in consultation with key stakeholders including:

- The Crown Estate;
- The Ministry of Defence (MoD);
- Maritime and Coastguard Agency (MCA);
- Trinity House;
- Oil & Gas operators;
- MMO;
- Historic England;
- Interconnector asset owners;
- Carbon capture storage (CCS) operators; and the
- National Federation of Fishermen's Organisations (NFFO).

192. Following the completion of the shipping and navigation assessment, desk-based ground conditions study, UXO risk assessment and consultation with stakeholders including the Crown Estate, the MCA and Trinity House, the Applicants selected three candidate sites within the two preferred AoS to progress for Site Investigation surveys to confirm the suitability of ground conditions. Of the candidate sites being progressed, two are within Site 4 (4b and 4d) and one is within Site 6 (6a). The locations of the candidate sites are presented in **Figure 6-7**.

193. Site 5, Site F, and Northwest were discounted on the following basis:

194. **Site 5**: This site was excluded on the basis of extremely limited opportunity due to water depth and potentially high risk associated with key navigational routes including those used by commercial ferry operators within the pockets of suitable depth. There were additional concerns relating to engineering constraints that were insurmountable including bedrock expected within the foundation depth, suspected high bed mobility (sandwaves superimposed on sand banks) and the presence of subsurface boulders. This location would also require a long transit from the nearest port if a service vessel were required for operations and maintenance activities - this presents significant environmental (greenhouse gas emissions), HSE and logistical difficulties.

195. **Site F**: This AoS was excluded on the basis of elevated risk associated with the distance from the Projects and associated ports and service vessels. The isolated nature of this location coupled with the distance from safe harbour presents unacceptable risk in relation to HSE concerns. These include elevated transit times to medical assistance, major accident hazard assessment risks in relation to emergency planning for a serious event, and increased risk of illness (sea sickness) and fatigue for personnel requiring access to the ANS for monitoring and maintenance activities. The shipping and navigation risk assessment also identified that there is a potentially unacceptable level of proximity risk on vessels in the east of the site, potentially unacceptable impacts on oil and gas operations associated with the Bessemer gas field and Corvette gas field, the former of which is located within Site F, and potentially unacceptable impacts on the maintenance of subsea pipelines associated with these oil and gas fields. This location would also be associated with elevated greenhouse gas emissions due to increased transit time.

196. **Northwest**: This site was down-selected due to engineering constraints across much of the site which include a highly limited area of drivable ground as well as its proximity to the proposed ANS sites for ODOW and Hornsea 4. The ground conditions in this area presented significant challenges for Hornsea 4 which they could not overcome and put the project at risk. A gravity base would be required for any offshore ANS placed within this location – this would be associated with a significant cost increase for the Projects and would have implications for the design base case adopted by the Applicants to date.

197. The candidate sites which are refined in scale compared to the AoS were determined following a process to identify discrete areas within the AoS characterised by low shipping and navigation risk, and suitable ground conditions. These smaller areas were then subjected to further interrogation to assess suitability from a health and safety, operations and maintenance, and engineering perspective. Soft constraints such as ecological suitability were also considered further in the final stages of down-selection, though all locations were considered suitable on the basis of previous assessments.

198. During the later stages of the site selection process, the Applicants continued to engage with the Crown Estate who raised concerns regarding the co-location of an ANS within CCS licence areas CS-006, and CS-007 which overlap the entirety of Site 4. It was initially understood that due to the subsurface nature of the CCS projects being delivered by bp, that the two projects could co-exist, but following engagement with bp and the Crown Estate, it was apparent that progressing any candidate sites within Site 4 would present a significant consenting risk.

199. Following a review of the suitability of candidate sites and advice from the Crown Estate, sites 4b and 4d have been discounted from further consideration.

200. The Applicants preferred m candidate site which has been progressed in the Marine Licence application is a refined area within the southern portion of Site 6a. The Marine Licence area is considered to present the lowest risks in terms of consenting, kittiwake collisions potentially related to offshore wind projects, shipping and navigation, health and safety (distance to safe harbour) and accessibility for monitoring and maintenance. Lower risks at Site 6a are balanced with good predicted ecological conditions for kittiwake (including connectivity with FFC SPA and avoidance of highly utilised foraging area for FFC SPA kittiwake), suitable bedform conditions, and optimal water depths. In accordance with principles outlined in **Round 4 KSCP** [APP-053] this location is approximately 61km from the FFC SPA, and between 12.8km and 15.2km from the proposed location of the Outer Dowsing ANS, dependent on the final location of the ANS within the Marine Licence area.

201. The Applicants selection of Site 6a as the preferred ANS location was presented to Natural England on 28th May 2025. The selection of Site 6a addresses concerns expressed by Natural England in their response to Examiners Questions on 23rd May 2025 [REP5-062: OR.2.15] where they stated that the proximity of sites 4b and 4d to the Hornsea zone and the Projects may have resulted in increased collision mortality for kittiwakes breeding on ANS in these locations. The Applicants completed a geophysical survey of the Site 6a in May 2025 and plan to conduct geotechnical surveys in Q2-Q3 2025. The outputs of the geophysical surveys confirmed the presence of suitable conditions for ANS installation and enabled the identification of suitable cone penetrometer test (CPT) locations. The preferred CPT locations are located within the southern portion of the ANS where seabed conditions are most suitable for foundation installation and as such, the AoS has been further refined to exclude the northern portion of the site.

202. The CPT survey was completed in June 2025, and borehole sampling will be undertaken in Q3 2025. This will provide data at locations identified following a review of geophysical site investigation data. The CPT locations within Site 6a are located between 13.6km and 17.2km from Outer Dowsing's offshore ANS location, and 12.7km to 14.4km from Hornsea Four's offshore ANS location. A Marine Licence application for Site 6a was submitted to the MMO in July 2025, with a refined area of approximately 4km^2. The Applicants are continuing to engage with The Crown Estate regarding the details of the Seabed Lease agreement and carrying out ongoing consultation with fisheries organisations and other key stakeholders in the interim.

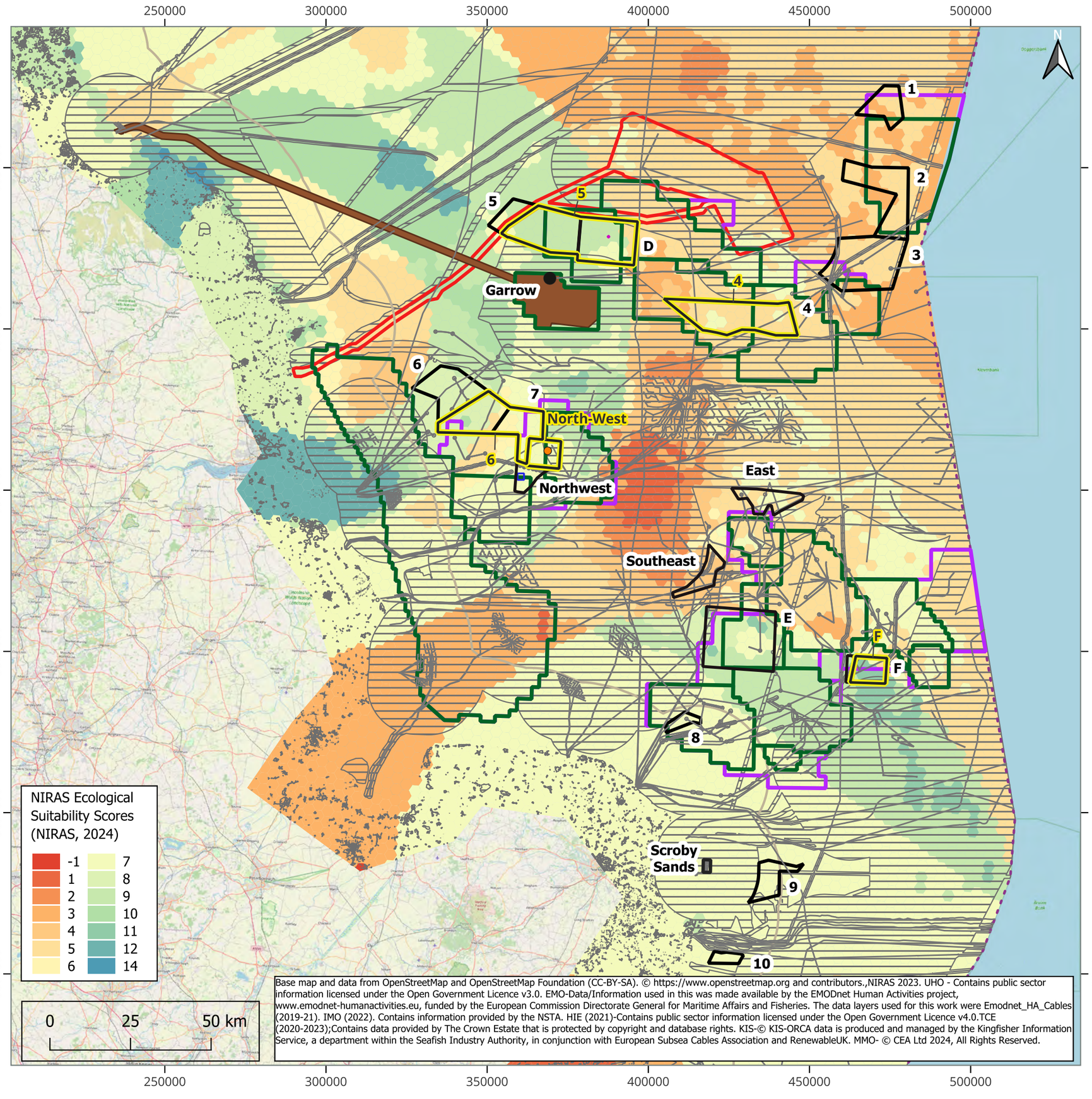
203. A final location will be selected for installation following analysis of the borehole and CPT data, collection of localised high-resolution geophysical data and the site characteristics are defined. The final site decision will be made on the basis of suitable ground conditions that will ensure ease of instalment and structural integrity of the ANS. The final location will also account for any archaeological findings that arise from the collection of further geophysical data.

204. Additionally, the Applicants continue to take account of new information from other developers (ODOW and Hornsea 4 projects) as it emerges. For example, the DCO application for ODOW at the time of writing is subject to determination by the SoS following their examination. The outcome may influence the onward delivery programme for ODOW and its offshore ANS proposal. These factors have potential implications for the Projects offshore ANS implementation timescales if delivered in collaboration with ODOW.

205. A Marine Licence application (MLA/2025/00344) was submitted on 8th July 2025, demonstrating the advanced stage of the Applicants offshore ANS delivery plans.

206. The Proximity Check and Asset and External Obligation Proximity Check Process has been completed by The Crown Estate for the areas covered by the three candidate sites. Following appraisal of the Proximity Checks, the Applicants conclude that none of the agreements triggered within the assessed portfolios represent feasible risks to the implementation of the offshore ANS locations provided to The Crown Estate within Site 6a. However, the Applicants are undertaking engagement with oil and gas operators in the vicinity as courtesy and as a precaution to ensure their understanding of any future risks which may be associated with development is complete. Engagement with The Crown Estate leasing team will continue as the delivery programme progresses. A Letter of Comfort from The Crown Estate on the process for an Agreement for Lease (AfL) for offshore ANS is provided in Appendix A of this report. The Crown Estate Proximity Check documentation is restricted and cannot be shared publicly due to the highly confidential nature of such documents.

207. In addition to the ANS being delivered by the Applicants at Site 6a, the Projects have committed to sharing nesting spaces and compensation benefits attached to Outer Dowsing's offshore ANS. The location of this structure is presented on **Figure 6-7**.



Legend:

- 12NM Limit
- EEZ
- Project Red Line Boundary
- AoS Shortlisted By DBS
- AoS - Second round of constraints assessment
- Garrow Platform
- Hornsea Four OWF ANS Site
- AoS Taken Forward by ODOW
- Indicative Area Required For Siting Offshore ANS
- Hard Constraints
- Hard Constraints
- Carbon Capture And Storage Site Agreements
- Carbon Storage Licence Area
- Carbon Capture Area Offered

S2						
S2	P03	01/07/2025	Suitable for information	AN	JC	EM
S2	P02	07/10/2024	Suitable for information	JC	EM	AN
S2	P01	27/09/2024	Suitable for information	JC	EM	AN
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Offshore ANS Areas of Search (AoS)

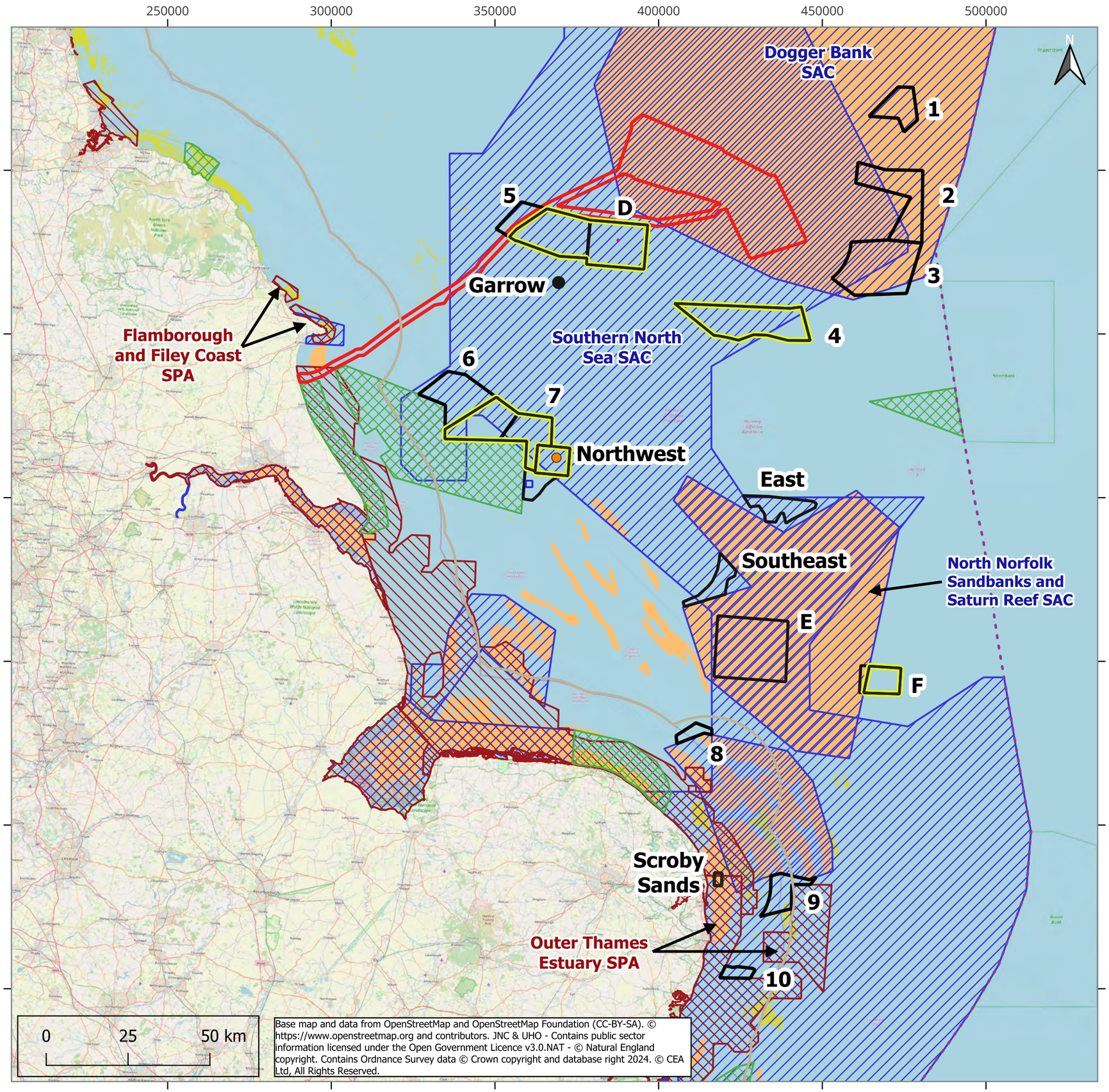
Figure: 6-2	Drawing No: PC2340-CEA-OF-ZZ-DR-Z-0030-OffshoreANSAoS

Co-ordinate system: WGS 84 / UTM zone 31N	Page Size: A3	Scale: 1:1,200,000

Project: Dogger Bank South Offshore Wind Farms	Title: Project-Level Kittiwake Compensation Plan

collaborative environmental advisers

RWE



Legend:

- 12NM Limit
- EEZ
- Project Red Line Boundary
- Shortlisted ANS Areas Of Search
- AoS - Second Round Of Constraints Assessment
- Garrow Platform
- Hornsea Four OWF ANS Site
- Indicative Area Required For Siting Offshore ANS
- AoS Taken Forward by ODOW
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Marine Conservation Zone (MCZ)
- Annex I Sandbank
- Annex I Reef

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P04					
S2	P03					
S2	P02	07/10/2024	Suitable for information	JC	EM	AN
S2	P01	27/09/2024	Suitable for information	JC	EM	AN

Title:

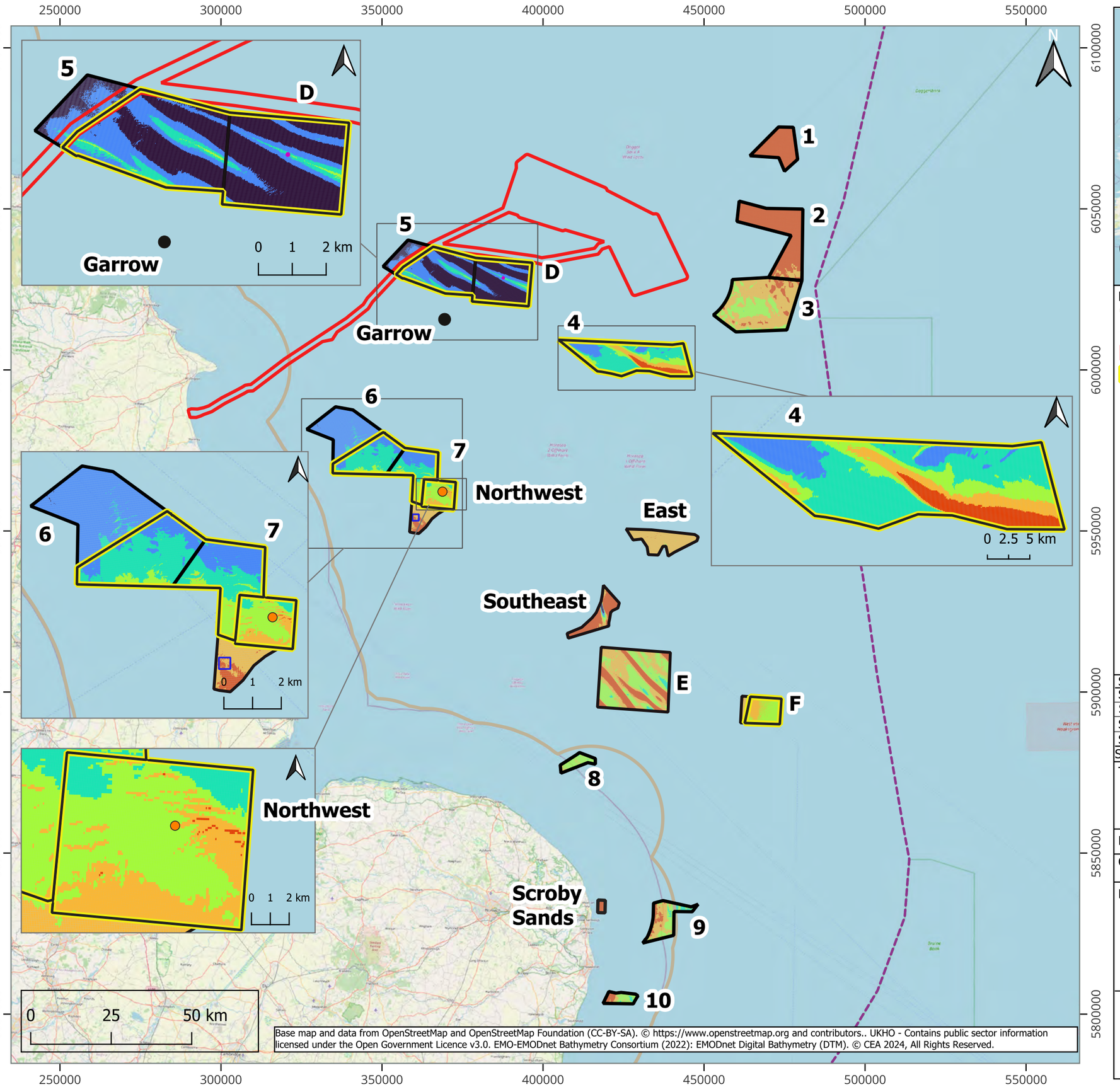
Ecological Constraints

Figure: 6-3	Drawing No: PC2340-CEA-OF-ZZ-DR-Z-0020-EcologicalConstraints	
Co-ordinate system: WGS 84 / UTM zone 31N	Page Size: A3	Scale: 1:1,200,000

Project:	Title:
Dogger Bank South Offshore Wind Farms	Project-Level Kittiwake Compensation Plan

collaborative environmental advisers

RWE



Legend:

- 12NM Limit
- EEZ
- Project Red Line Boundary
- Shortlisted ANS Areas of Search
- AoS - Second Round Of Constraints Assessment
- Garrow Platform
- Hornsea Four OWF ANS Site
- AoS Taken Forward by ODOW
- Indicative Area Required for Siting Offshore ANS

Bathymetry (m)

- -18 To -20
- -20 To -25
- -25 To -30
- -30 To -35
- -35 To -40
- -40 To -50
- Below -50

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P05					
S2	P04					
S2	P03					
S2	P02	07/10/2024	Suitable for information	JC	EM	AN
S2	P01	27/09/2024	Suitable for information	JC	EM	AN

Title:

Bathymetry

Figure: 6-4	Drawing No: PB2340-CEA-OF-ZZ-DR-Z-0019-Bathymetry	
Co-ordinate system: WGS 84 / UTM zone 31N	Page Size: A3	Scale: 1:1,200,000

Project:

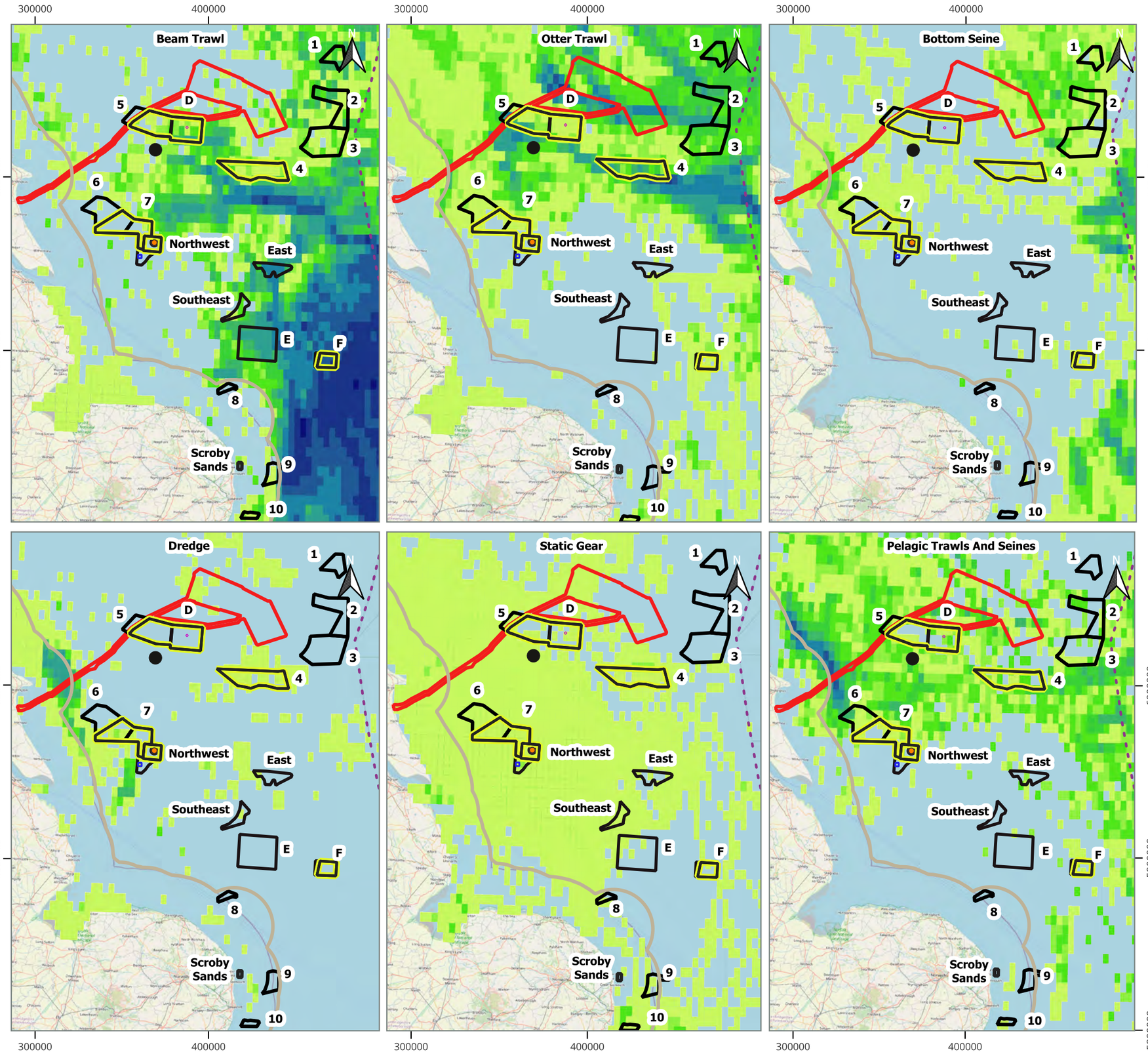
Dogger Bank South Offshore Wind Farms

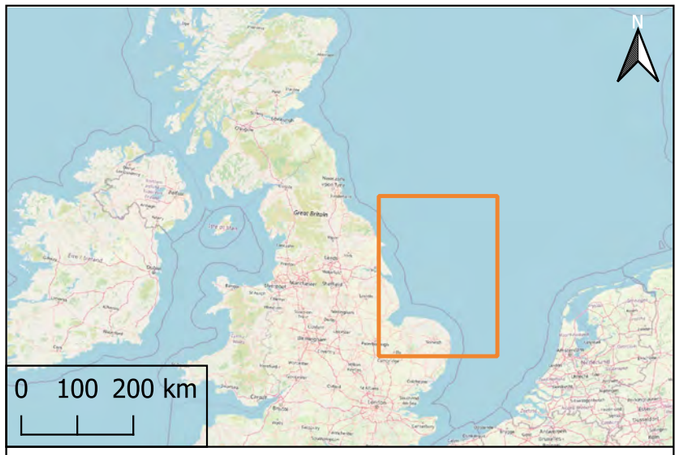
Title:

Project-Level Kittiwake Compensation Plan

collaborative environmental advisers

RWE





Legend:

- 12NM Limit
- EEZ
- Project Red Line Boundary
- Shortlisted ANS areas of search
- AoS - Second Round Of Constraints Assessment
- Garrow Platform
- Hornsea Four OWF ANS Site
- AoS Taken Forward By ODOW
- Indicative Area Required For Siting Offshore ANS

Average MW Fishing Hours

> 0 <= 1	> 20 <= 50
> 1 <=2	> 50 <= 100
> 2 <= 5	>100 <= 200
> 5 <=10	> 200 <= 500
> 10 <= 20	> 500

S2	P04					
S2	P03					
S2	P02	07/10/2024	Suitable for information	JC	EM	AN
S2	P01	27/09/2024	Suitable for information	JC	EM	AN
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Average Fishing Hours

Figure: 6-5	Drawing No: PB2340-CEA-OF-ZZ-DR-Z-0022-AvFishingHours

Co-ordinate system: WGS 84 / UTM zone 31N	Page Size: A3	Scale: 1:2,318,052

Project:

Dogger Bank South Offshore Wind Farms

Title:

Project-Level Kittiwake Compensation Plan

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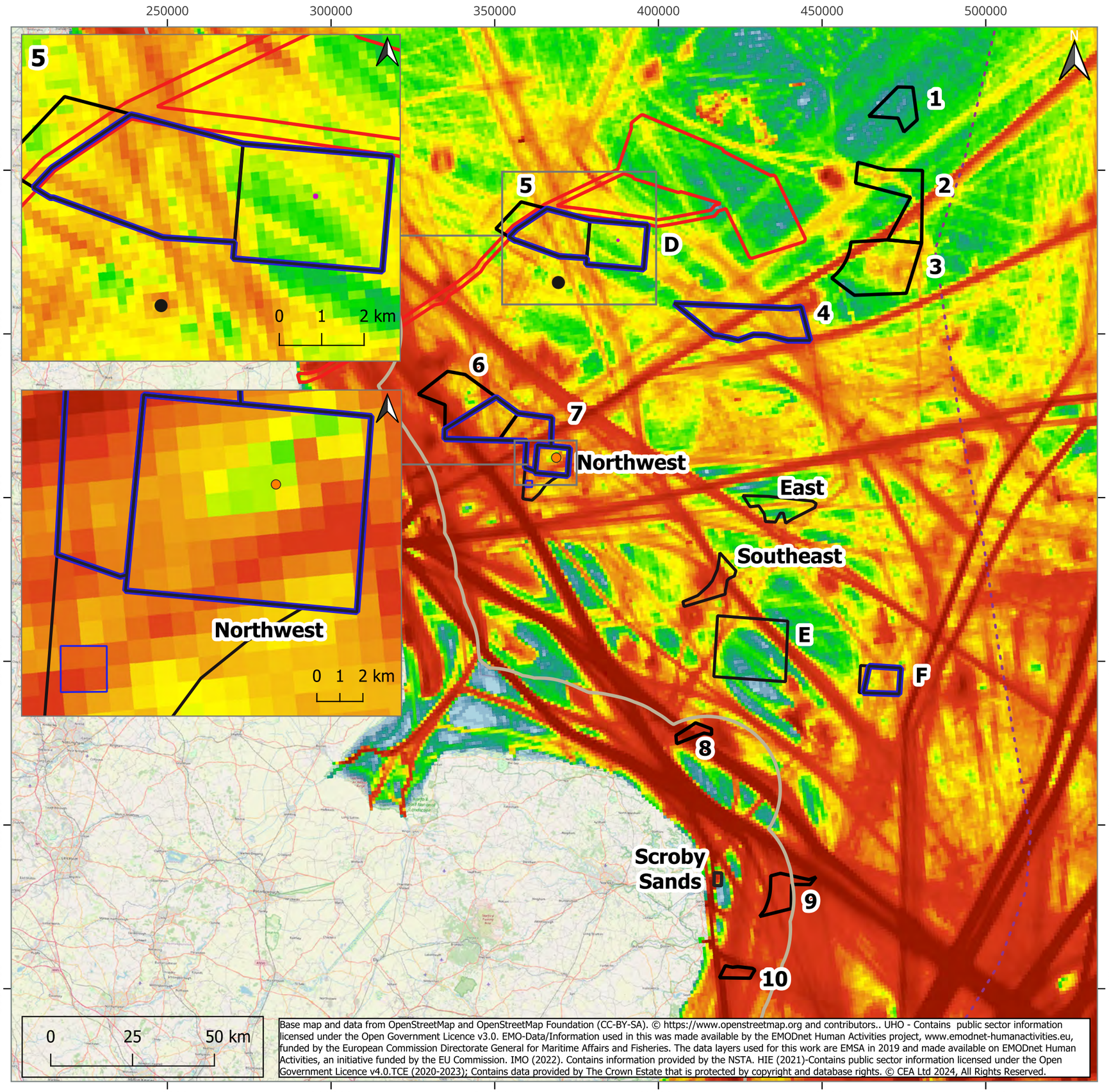
RWE

0 50 100 km



Legend:

- 12NM Limit
- EEZ
- Project Red Line Boundary
- AoS Shortlisted By DBS
- AoS - Second Round Of Constraints Assessment
- Garrow Platform
- Hornsea Four OWF ANS Site
- AoS Taken Forward by ODOW
- Indicative Area Required For Siting Offshore ANS

Vessel Route Density
Annual Totals - All Types (Routes per square km/year)

- 1200+
- 240
- 120
- 60
- 24
- 6

S2	P04					
S2	P03					
S2	P02	07/10/2024	Suitable for information	JC	EM	AN
S2	P01	27/09/2024	Suitable for information	JC	EM	AN
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Vessel Density

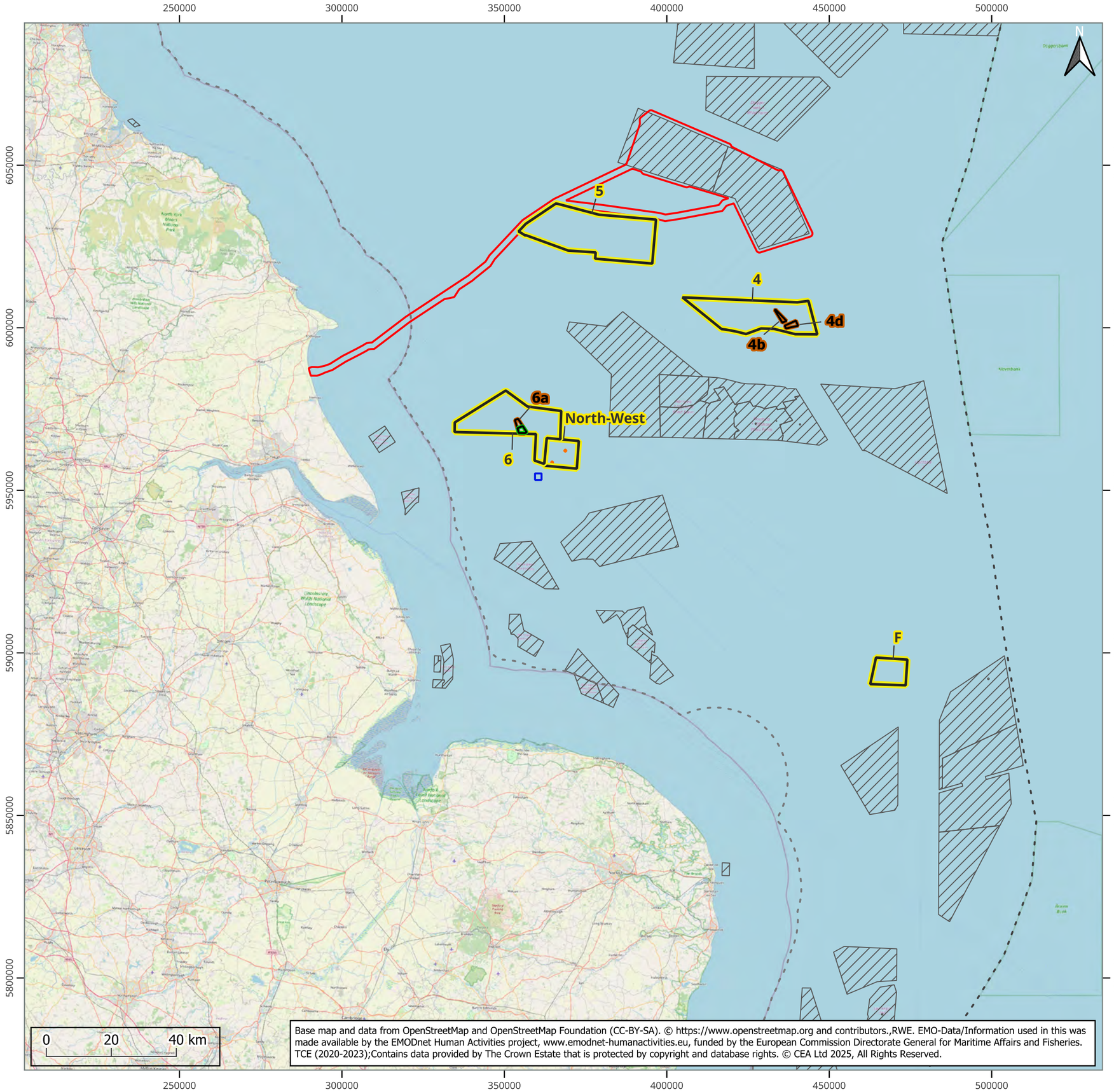
Figure: 6-6	Drawing No: PC2340-CEA-OF-ZZ-DR-Z-0021-VesselDensity

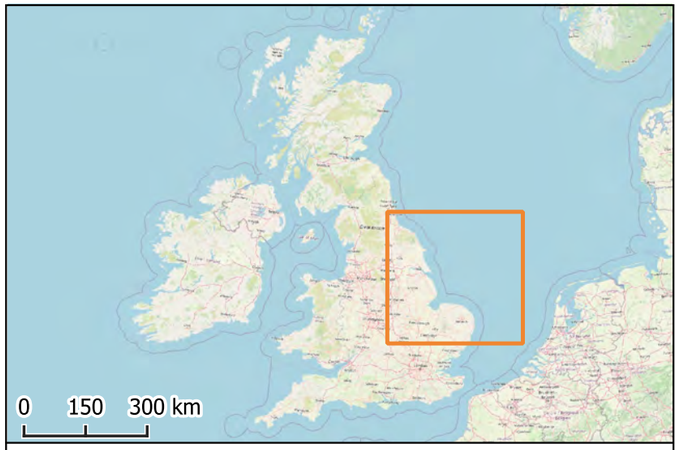
Co-ordinate system: WGS 84 / UTM zone 31N	Page Size: A3	Scale: 1:1,200,000

Project: Dogger Bank South Offshore Wind Farms	Title: Project-Level Kittiwake Compensation Plan

collaborative environmental advisers

RWE





Legend:

- Project Red Line Boundary
- Marine Licence Area
- Candidate Sites
- Shortlisted ANS Area of Search
- AoS Taken Forward by ODOW
- Hornsea 4 OWF ANS Sites
- Offshore Wind Site Agreements
- EEZ
- 12NM

S2	P04					
S2	P03					
S2	P02					
S2	P01	01/07/2025	Suitable for information	AN	EM	EP
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Figure 6-7: ANS Candidate Sites

Figure: 0019	Drawing No: PC2340-CEA-OF-ZZ-DR-Z-0031-OffshoreANSAoS-P01

Co-ordinate system: WGS 84 / UTM zone 31N	Page Size: A3	Scale: 1:1,200,000

Project: Dogger Bank South Offshore Wind Farms	Title: Project-Level Kittiwake Compensation Plan

collaborative environmental advisers

RWE

6.3.5 Outline Design Details

208. **Volume 6, KSCP** [APP-053] presents a set of design principles for offshore ANS which builds upon the evidence presented by NIRAS (NIRAS, 2021a and 2021b) for the Hornsea Four Project and the ecological criteria presented by LDA Design (2021) for the Hornsea Three Project. It also draws upon information presented in various other OWF DCO applications (e.g. Norfolk Boreas, Norfolk Vanguard, East Anglia One North / Two and SEP and DEP) which have been subject to stakeholder review during the consent application process. It therefore forms a robust framework for offshore ANS design with flexibility to incorporate further considerations where necessary.

209. Key design features of an offshore ANS which are considered essential for kittiwake include:

- High and steep sided structure with a near vertical back wall and narrow horizontal ledges.
- Adequate ledge dimensions: Horizontal ledges of 200mm width, length per pair from 300mm width (working length 400mm).
- Height between ledges at a minimum of 400mm and a maximum of 600mm.
- Lowest ledges located above the reach of wave action at highest astronomical tide.
- Minimum height should account for expected sea level rises and be above splash zone of highest astronomical tide for 2050.
- South facing aspects should be avoided where possible.
- The ANS should be as inaccessible to avian predators as possible, potentially including use of anti-predation features; and
- Capacity to deploy decoys to attract breeders, which can then be removed once the colony is established.

210. There are several other design features which are considered to optimise the potential success of a structure which include:

- An overhang or roof to protect against weather conditions and an additional predator deterrent. Roof pitch in excess of 25 degrees can be used to deter nesting (of avian predators such as large gulls).

- The ledge overhangs sufficiently to minimise lower ledge fouling, and potential for reducing avian predation; and
- Partitions should be provided between each discreet nesting site.

211. Members of the Kittiwake Steering Group agree that the design principles outlined above and in table 10.1 of **Volume 6, KSCP** [APP-053] are ecologically suitable and appropriate to inform the design of Round 4 offshore ANS. However, several additional principles were recommended for the final design to facilitate monitoring of the ANS post-installation including:

- Internal access to ANS and nesting ledges; and
- An external power source to support remote monitoring.

212. Note that some design parameters have been adjusted slightly following concept design work undertaken by the Applicants. Any adjustments have been made with oversight from the Kittiwake Steering Group and only where necessary to ensure functionality and safety of the structure. Necessary deviations from ecological design specifications outlined in the **Volume 6, KSCP** [APP-053] are detailed in **Outline Kittiwake CIMP (Revision 2)** [REP4-022].

213. A design and engineering assessment will be undertaken by the Applicants following the identification of a suitable location for the implementation of an offshore ANS. The final design specification will be informed by the best principles outlined above and will be developed in consultation with relevant stakeholders and detailed within the Kittiwake CIMP (if required in addition to the KSIMP).

6.3.6 Timescales

214. Draft Defra guidance (Defra, 2021) states that compensation should ideally be in place, functioning and contributing to the coherence of the UK NSN prior to any impact occurring, which in this case is at the start of OWF operation. Kittiwakes are known to start breeding on average at four years old (Horswill and Robinson, 2015) although a proportion of kittiwakes (26.5%) breed for the first time at three years old (Coulson, 2011).

215. It is acknowledged that ideally, to avoid any delay in the provision of compensation, offshore ANS should be implemented three to four years before operation to allow sufficient time for the recruitment of juveniles to the adult population. However, upon review, the Applicant concludes that such a requirement would significantly impact the Projects programming and would require sizeable investment decisions to be made prior to the FID for the Projects. It is therefore necessary to reduce the number of breeding seasons prior to operation to two, to allow greater flexibility and reduce risk of delays and ensure that the Projects are contributing to UK Net Zero targets as soon as possible.

216. An additional factor considered by the Applicants is the submission of ODOW's Change Notification dated November 2024 which proposes to reduce the length of time their ANS is required to be in place ahead of operation from three full kittiwake breeding seasons to two.

217. Furthermore, in March 2024, Orsted's Hornsea Three Offshore Windfarm was granted a non-material change to reduce the amount of time that ANS were required to be in place from four to two full kittiwake breeding seasons for two of their proposed ANS, and from four to three breeding seasons for another two ANS. Orsted were also granted a second non-material change in July 2024 for Hornsea Project Four to shorten the length of time their single offshore ANS needs to be in place before operation from at least four full breeding seasons to at least two full breeding seasons (Orsted, 2024). Both non-material changes were granted on that basis of evidence demonstrating sufficient new colony growth rates to compensate for accrued mortality over the lifetime of the projects. This was based upon a number of demographic factors:

- Initial colony size (either of 1 or 20/25);
- Initial colony growth rate – based on logistic growth rates; and
- Productivity

218. The input values differ slightly between the two projects, however; the models remain similar. In both cases the models demonstrate that the ANS will overcompensate for the collision mortality within the lifetime of the project and that in the wider context of kittiwake populations in the North Sea the difference in when the break-even point occurs (when compensation exceeds impact, summed across years) for ANS installation four years prior to operation compared with two years is insignificant.

219. The Applicant has applied the same calculations as those given in the Hornsea 4 non-material change (the most recently accepted change) to the Projects impact numbers provided in section 5.1. Calculations demonstrate that the only effect of a reduction of breeding seasons will be to delay success of the compensation by the same amount of time. Given that the colonies will grow from zero, even at high growth rates, it will take more than four years for the annual production to exceed annual mortality, and longer still to compensate the mortality debt. As such, there is little biological relevance to the four-year figure.

220. For a single ANS and using all but the worst-case productivity parameters, it would take between 13 and 37 years for productivity to exceed accrued mortality (assuming the colony initially has 20 pairs) or between 19 and 50 years (assuming the colony initially has a single pair) (see Table 4-1, **Case for Reduction in Kittiwake Breeding Seasons for ANS Installation (Revision 2)** [REP4-083]). In most scenarios for the mean mortality, the offshore ANS would deliver the required compensation quantum within the Projects lifetime.

221. The same scenarios for the upper 95% confidence interval mortality are presented in **Case for Reduction in Kittiwake Breeding Seasons for ANS Installation (Revision 2)** [REP4-083]. Whilst, success takes longer, it is still achieved in most scenarios other than those with the lowest growth rates.

222. Given a likely compensation ratio of 2:1 compensation would be provided by the second structure within the same timescales. Should ANS installation occurs two full breeding seasons prior to operation, it is anticipated that full compensation would be achieved from 13 years following first generation (dependent on the colonisation and productivity scenarios).

223. In the event that the ANS is colonised but there is remaining compensation debt after 30 years of operation (the Projects' lifespan); to reduce the risk of compensation deficit the Applicant retains the option to maintain and monitor the ANS beyond the duration of the Projects. This additional responsibility could be implemented as adaptive management, to be reviewed regularly with oversight from the kittiwake Steering Group which will include Natural England and the RSPB as primary members. This additional commitment assumes that there will be successful colonisation of the structure, and that the delivery of the final compensation quantum is feasible within the lifespan of the ANS itself. This adaptive management may help ensure the success of the offshore ANS and can provide confidence that the measure will deliver the compensation requirement for the Projects, even if beyond the Projects' operational lifespan. Further details are provided via updates to the Applicants' **Outline Kittiwake (CIMP) (Revision 2)** [REP4-022].

224. Further details on the case for reduction in breeding seasons ahead of ANS installation can be found in **Case for Reduction in Kittiwake Breeding Seasons for ANS Installation (Revision 2)** [REP4-083].

225. The Applicants are prioritising the delivery of at least one offshore ANS in collaboration with other OWF developers whose projects are at the same or a more advanced stage of the consent or development process to the Projects. It is anticipated that both offshore ANS delivered via a collaborative arrangement could be implemented no less than two breeding seasons prior to operation of the Projects. However, this is subject to programme confirmation from prospective collaborative partners which at the time of writing is evolving.

226. For example, the DCO application for ODOW at the time of writing will be subject to determination by the SoS in due course. The duration of this process and outcome may influence the onward delivery programme for ODOW and its offshore ANS proposal.

227. In addition to the collaborative offshore ANS proposed with ODOW, the Applicants are also proposing to deliver a project-led offshore ANS. Based upon the current project programme (see section 6.3.8), the Applicants intend to implement this offshore ANS as soon as possible, but at least two breeding seasons prior to operation of the Projects, in accordance with **Volume 6, KSCP** [APP-053].

228. In the event that the offshore ANS being led by ODOW cannot be secured and delivered on a collaborative basis, the Applicants will provide sufficient quantum of compensation for kittiwake in a single ANS which they will develop or will partly rely on strategic delivery of offshore ANS via the MRF (i.e. alongside the project-led offshore ANS) to deliver the necessary level of compensation for the Projects.

229. The Applicants are confident that should there be a delay to the implementation and delivery of offshore ANS via any one of the delivery options (strategic, collaborative or project-led), any compensation deficit accrued would be small enough to be paid off over the lifespan of the Projects. However, the scale of compensation could also be increased (i.e. increase numbers of nesting spaces on the ANS), or alternative measures relied upon (e.g. onshore ANS at Gateshead) to offset any potential deficit accumulated during the earlier years of operation.

230. The Applicants would emphasise the value of the onshore ANS that has already been delivered at Gateshead. This structure was installed ahead of the **Volume 6, KSCP** [APP-053] publication and was delivered in good faith with the understanding that this structure could provide compensation and avoid the accrual of mortality debt well in advance of any impacts associated with operation. The onshore ANS was constructed a full seven breeding seasons ahead of first possible operation for the Projects.

6.3.7 Monitoring, Maintenance, and Adaptive Management

231. Monitoring of the offshore ANS is required to demonstrate the success of this measure and to inform potential adaptive management if the offshore ANS is found to be under-performing. The measure can be deemed successful if it provides the required number of adult kittiwakes into the meta-population (and therefore the FFC SPA population) equivalent to the predicted impact of the Projects. Information regarding compensation quantum and therefore the scale of offshore ANS required is presented in sections 5 and 6.3.2 of this plan.

232. Details regarding plans for monitoring, maintenance and adaptive management, so far as they are developed at the time of writing, are provided in **Outline Kittiwake CIMP (Revision 2)** [REP4-022].

233. Monitoring of the offshore ANS would commence the first breeding season following implementation and would continue post-construction and at least until the success of the compensation has been demonstrated. This may potentially cover the duration of the operational phase for the Projects and beyond. It is also expected that ongoing monitoring of the condition of the offshore ANS and routine maintenance would be required for at least the lifetime of the Projects.

234. **Volume 6, KSCP** [APP-053] outlines a framework for the monitoring of offshore ANS as well as principles for adaptive management to address any unexpected shortfalls in the level of compensation provided by this measure. It is recommended that monitoring to determine success should focus on:

- Colony counts (i.e. AON, counts of site holding birds or nests capable of containing eggs).
- Productivity monitoring (i.e. number and age of chicks observed).
- Colonisation monitoring (i.e. counts of AON, trace nests or prospective birds); and
- Monitoring of natal dispersal (if possible).

235. Following successful installation of the onshore ANS in Gateshead (the 'Kittiwakery') in 2023, the Applicants has been carrying out ongoing monitoring, while developing observation techniques and a set of criteria for monitoring the early indicators of colony establishment (Stevenson *et al.*, 2024). The onshore ANS provides additional benefits beyond habitat provision in that it allows for the testing of monitoring equipment and techniques in an accessible and less challenging environment, therefore providing an ideal test bench for future monitoring programmes offshore.

236. While metrics for determining the success of the offshore ANS will be in alignment with those outlined in **Volume 6, KSCP** [APP-053] and will include AON and productivity monitoring, it should be noted that through work at the onshore ANS in Gateshead, indicators of early colony formation that preclude AON, and productivity are being developed. The Applicants understand such indicators would be valuable and as such should be applied in any future kittiwake monitoring programmes as a measure of success prior AONs and productivity. The application of such indicators would allow the Applicants to identify the need for adaptive management to be undertaken at an earlier stage (if required) and therefore promote the faster development of a successful colony.

237. Therefore, a monitoring programme remains under development and is partly contingent on outcomes of the onshore ANS monitoring programme at Gateshead.

238. Further details on the process for determining potential trigger points for adaptive management are provided in **Volume 6, KSCP** [APP-053] along with possible adaptive management measures. Information on the monitoring and adaptive management approach for the Round 4 offshore ANS will be developed post-consent in consultation with the Kittiwake Steering Group and presented within the KSIMP.

239. The Applicants' proposal for monitoring, maintenance and adaptive management is being developed in accordance with **Volume 6, KSCP** [APP-053] and in consultation with the Kittiwake Steering Group. This information is presented in the **Outline Kittiwake CIMP (Revision 2)** [REP4-022] which is being developed upon request from the Examining Authority.

6.3.8 Outline Implementation and Delivery Roadmap

240. Discussions with other OWF developers with respect to collaborative compensation opportunities for offshore ANS delivery remain ongoing. As evidenced by **Volume 6, Collaborative Delivery of Kittiwake Compensation: Letter of Intent** [APP-055]. Furthermore, the signed MoU between the Applicants and, ODOW demonstrates commitment between both parties to progress offshore ANS collaboratively. Updates concerning discussions with ODOW and other OWF developers, including an outline implementation roadmap for collaborative offshore ANS delivery will be provided to the Examining Authority during DCO examination following any developments in programme.

241. Several factors have given the Applicants cause to re-examine timelines in regard to number of breeding seasons between offshore ANS installation and wind farm operation. These are centred around the biological case for kittiwake, precedent for other OWF projects providing kittiwake compensation, and the Projects' programme (primarily related to fabrication and lead in times).

242. In 2024, Orsted's Hornsea Three was granted a non-material change (NMC) to reduce the amount of time that ANS were required to be in place from four to two breeding seasons for two of their proposed ANS, and from four to three breeding seasons for another two ANS. Orsted were also granted a second NMC for Hornsea Project Four to shorten the length of time their single offshore ANS needs to be in place before operation from at least four full to two full breeding seasons. As well as providing evidence that ANS still deliver sufficient compensation over their life expectancy, the Hornsea cases have provided precedent for consent on the basis of installing two years in advance of operation.

243. ODOW has followed the Hornsea projects' approach and has had a change request to amend their DCO wording to reduce the number of breeding seasons ahead of operation from three to two accepted into their examination.

244. There were several drivers behind the reduction in breeding seasons for the Hornsea Projects and ODOW which also apply to the Applicants. The Hornsea Projects required the NMCs to allow time for the construction of the ANS without impacting the programme for the operation of the development and avoiding unnecessarily delay in provision of renewable energy to the national grid.

245. Delivering an offshore ANS is a challenging task, and one that resulted in Hornsea 4 abandoning their offshore ANS scheme in pursuit of an onshore one – it is evident that the delivery of this measure can be a genuine risk to overall project delivery. As such, the Applicants assert that it is crucial to ensure that they hold all of the necessary ground condition data from site investigation surveys, have adopted thorough processes with site selection, and are proceeding with diligence during the concept and detailed design phases for the ANS. Following the latest stage of site selection work, the Applicants have examined their offshore ANS delivery programme, and it is evident that delivering on offshore ANS ahead of Q4 2027 would be highly challenging (see **Table 6-3**).

246. Key tasks and milestones that fed into this conclusion include the following:

- Completion of the site investigation surveys to determine ground conditions
- Identification of ANS Marine Licence area
- Submission of Marine Licence application for offshore ANS

- Detailed design phase for foundation and topside

247. Procurement of contractor for construction of foundation and topside
    - Sourcing of materials for construction
    - Construction of foundation and topside
    - Transportation
    - Installation of ANS in preferred location.

248. The fabrication process itself is contingent upon availability of the preferred contractors and materials (primarily steel). Sourcing of materials will additionally be subject to international supply chains which are presently subject to flux due to international market uncertainty. With these factors combined, it would be highly challenging for the Projects to deliver an offshore ANS more than two breeding seasons ahead of first possible operation. Further details are provided in **Case for Reduction in Kittiwake Breeding Seasons for ANS Installation (Revision 2)** [REP4-083]. Given evidence provided in **Case for Reduction in Kittiwake Breeding Seasons for ANS Installation (Revision 2)** [REP4-083], which demonstrates there is minimal relevance for the four-breeding season requirement for kittiwake ahead of operation, the Applicants propose to reduce the number of breeding seasons prior to operation to two. Installation four years prior to operation significantly impact the Projects programming and would require sizeable investment decisions to be made prior to the FID for the Projects. Furthermore, to deliver the offshore ANS four years in advance of first possible operation (planned for 2029), the Applicants would have been required to install the structure in Q1 2025, prior to consent being granted. This was not considered feasible in regard to financial or logistical risks. The revised timeline allows for greater flexibility and reduced risk of delays and will ensure that the Projects are contributing to UK Net Zero targets as soon as possible.

249. The remainder of this section focuses on the implementation and delivery of the Applicants' Project-led offshore ANS proposal, which will collaboratively apportion a pre-defined amount of nesting space to ODOW.

250. The Applicants will take the following steps to implement and deliver an offshore ANS on a project-led basis:
    - Ongoing consultation will be undertaken as required with all relevant stakeholders, including members of the kittiwake ETG and, where

appropriate, the Kittiwake Steering Group. If granted consent, the Projects may be required to establish a separate Kittiwake Compensation Steering Group (KCSG) to oversee the development, implementation, monitoring and report of the compensation at the project level. Core members of the KCSG will include the MMO and Natural England, as well as any key local stakeholders. The RSPB will also be invited to participate. Whether or not a separate governance process is required for the Projects compensation proposals, in addition to that already in place at the plan level is expected to be confirmed by the SoS as part of the consent decision.

- As outlined in section 6.3.4, site investigation work has been undertaken to identify the Applicants Marine Licence application area and to inform the design of the offshore ANS. This includes geophysical and geotechnical surveys for which the necessary consents have been sought and granted. This work is being undertaken during examination and has been developed in consultation with members of the kittiwake ETG as well as other key stakeholders.
- A concept design has been finalised for the offshore ANS. This has been subject to consultation with the Kittiwake Steering Group and based on this design, an invitation to tender (ITT) has been issued for the procurement of a contractor to undertake engineering certification, fabrication, construction, loadout, transportation and installation, testing and commissioning of the ANS.
- As outlined in section 6.3.6, it is anticipated that project-led offshore ANS will be installed a minimum of two breeding seasons prior to first turbine operation of the Projects to allow for the recruitment of breeding adults to the population. The exact timescales will be agreed upon with the Kittiwake Steering Group including any implications for the scale of compensation required to account for when offshore ANS is implemented.
- ANS foundation and topside design will be undertaken in line with the design principles set out in section 6.3.5. Consultation will be undertaken with relevant stakeholders to reach an agreement on the design details and exact location of ANS within the shortlisted candidate sites. The design process will consider the potential impacts related to the installation of offshore ANS as outlined in section 6.3.9. Relevant

stakeholders would be consulted on potential impacts and measures to avoid and mitigate adverse effects and maximise the wider benefits of the structure.

- A Marine Licence application has been submitted to the MMO (8th July 2025 - MLA/2025/00344) to ensure that the appropriate consent is in place prior to ANS installation. The application documents include all relevant environmental assessments (e.g. MCZ Assessment, Marine Plan Assessment, Underwater Noise Assessment, Supporting Environmental Information (SEI) and Marine Archaeology Assessment as appropriate).
- The necessary seabed rights will be secured from The Crown Estate, as owner of the seabed. Once the location of the offshore ANS has been identified, exclusivity will be sought by the Applicants with the intention of entering into a lease prior to construction. Proximity checks undertaken by The Crown Estate have been completed for the five shortlisted ANS AoS progressed by the Applicants. Engagement with the Crown Estate leasing team will continue, and updates will be provided throughout the DCO examination.
- The detailed delivery proposal for the agreed kittiwake compensation measures will be set out in the Kittiwake CIMP.
- The success of the offshore ANS will be monitored in line with the details provided in section 6.3.7. The results of monitoring will be communicated with the KCSG on a regular (annual) basis. The findings of the monitoring programme will inform the need for any adaptive management that may be required.

251. An outline implementation roadmap for the delivery of the project-led offshore ANS is provided in **Table 6-3** Note that the dates provided are indicative and at this stage may be subject to change as the timings of key milestones e.g. consent award, FID, construction and start of operation are still to be confirmed.

252. An indicative programme for ANS delivery for ODOW is outlined in **Table 6-4**. The dates provided are provisional and are presented within the context of the project being operational in 2030.

Table 6-3 Outline Implementation and Delivery Roadmap For Project-Led Offshore ANS.

Timing	Indicative date	Activity/milestone	2024	2025	2026	2027	2028	2029
Pre-consent	2024 (Q1 – Q2)	Development of project-led offshore ANS proposal (including AoS appraisal) following publication of **Volume 6, KSCP [APP-053]** and in consultation with Kittiwake ETG.						
Pre-consent	2024 (Q2)	Projects' DCO application submitted to SoS						
Pre-consent	2024 (Q2) – 2025 (Q1)	Further technical and engineering assessment work undertaken to refine the offshore ANS AoS shortlist. Develop offshore ANS design.						
Pre-consent	2024 (Q4)	Down-selection of shortlisted AoS to final site(s) to be progressed for Site Investigation surveys.						
Pre-consent	2024 (Q2) – 2025 (Q1)	Ongoing stakeholder engagement regarding the design and siting of offshore ANS as well as Marine Licensing, consents and lease application requirements.						
Pre-consent	2025 (Q1 – Q3)	Secure necessary licences, consents, and seabed lease.						

Timing	Indicative date	Activity/milestone	2024	2025	2026	2027	2028	2029
Post-consent	2026 (Q1)	Anticipated DCO consent granted for the Projects.						
Post-consent	2026 - 2027	Fabrication of project-led offshore ANS.						
Post-consent	2027 (Q4)	Installation of project-led offshore ANS.						
Year 1 - 2	2028 - 2029	Kittiwake compensation monitoring – Breeding seasons 1 & 2.						
Year 2	2029 (Q4)	Earliest first power for DBS. Continue compensation and annual monitoring programme as per the Kittiwake CIMP (if required in addition to the KSIMP), and any necessary adaptive management.						

Table 6-4 Outer Dowsing Offshore Wind Project Indicative Offshore ANS Programme (ODOW, 2024b).

Activity/milestone	2025	2026	2027	2028	2029	2030
Expected DCO outcome						

Activity/milestone	2025	2026	2027	2028	2029	2030
Fabrication of ANS components						
Offshore installation of ANS components						
ANS compensation implemented						
Turbine commissioning, operation						

6.3.9 Consideration of Potential Impacts from Implementation

253. A preliminary assessment of potential impacts that may arise as a result of the installation of offshore ANS is outlined in **Table 6-5** along with potential approaches that may be taken to avoid, reduce or mitigate negative impacts. This assessment should be regarded as preliminary acknowledging that site selection work is ongoing and likely to inform the scope of predicted impacts on the marine environment. A more detailed environmental assessment will be undertaken as part of any future consent or planning application as required.

Table 6-5 Potential Impacts From Implementation Of Offshore ANS.

Potential impacts	Details	Measures to avoid, reduce or mitigate impact
Impacts on other designated sites and protected features	Some of the shortlisted AoS for offshore ANS placement overlap with the Southern North Sea SAC.	An underwater noise assessment would be carried out. Time restrictions for piling activities could be applied (if required).
	Some of the shortlisted AoS for ANS placement are located in relatively close proximity to DB SAC (e.g. AoS D which is approximately 2.7km away) and may result in temporary indirect habitat disturbance for sandbank feature.	Impacts would be temporary and intermittent (with installation expected to be carried out in a series of phases taking a total of approximately nine months). Sediment would settle out of the water column rapidly and due to high dispersal potential, smothering is considered highly unlikely. Given this, mitigation is not considered necessary.
Diminishing returns from the introduction of additional structures	There are concerns surrounding the potential for diminishing returns with an increasing number of structures in the southern North Sea.	An annual monitoring programme will ensure that offshore ANS colonisation and kittiwake numbers are recorded and shared with the relevant stakeholders. Adaptive management measures will be introduced if necessary. Within the lifespan of the Projects, oil and gas infrastructure in the North Sea may be removed which could in turn increase the value of offshore ANS.

6.4 Onshore ANS

254. As outlined in section 6.1 and in line with SNCB guidance, onshore ANS is proposed by the Applicants as a supporting or adaptive management measure rather than a primary compensation measure. It specifically relates to the Applicants existing onshore ANS at Gateshead which could only be relied upon to deliver a proportion of the kittiwake compensation required for the Projects for example, to offset any deficit linked to the primary compensation measure (i.e. offshore ANS). The Applicants are not proposing to implement any new onshore ANS in addition to the structure already in place at Gateshead.

255. Further information regarding the Applicants existing onshore ANS at Gateshead is provided below.

6.4.1 Overview

256. As well as colonising offshore man-made structures, kittiwake are known to utilise artificial structures inland for breeding purposes. First noted in 1994, kittiwakes have successfully bred on various man-made structures along the River Tyne, Newcastle (Turner, 2010; RWE Renewables UK, 2024). The most notable colony in this area can be found on the Tyne Bridge, approximately 17km inland, which in recent years has supported ~1,000 breeding pairs (Turner, 2010). In 1997 a dedicated onshore ANS (known as the Saltmeadows tower) was built by Gateshead council to compensate for kittiwake displaced from the Baltic Flour Mill which was developed into an Arts centre (Turner, 2010). In 2000/2001, the structure was moved more than 1km downstream to its current location at Saltmeadows and many kittiwake pairs immediately relocated onto the tower at its current location. This structure has in recent years supported around 100 pairs (Turner, 2021).

257. Onshore ANS have been proposed for several OWF projects as a compensatory measure for predicted impacts on kittiwake and several structures have now been implemented on the east coast of England in relation to Hornsea Three Project, Norfolk Projects, East Anglia ONE North and East Anglia TWO. In addition, SEP and DEP has recently been granted consent with a requirement to deliver compensation for kittiwake by modifying the existing Saltmeadows tower at Gateshead to increase its overall productivity (Equinor, 2022). This shows the measure is both feasible and implementable both in the onshore and nearshore environment.

258. In February 2023, the Applicants installed a single onshore ANS at Gateshead, on the site adjacent to the existing Saltmeadows tower to increase kittiwake breeding success in the area. It was designed by Shoney Wind Ltd and Francis and Lews International Structures following an extensive survey programme of urban and natural coastal colonies to determine the factors that most influenced productivity (RWE Renewables UK, 2022b). The final design of this structure incorporated many of the design principles outlined in **Volume 6, KSCP** [APP-053] and is tailored specifically to the site and local environmental conditions. To ensure the structure can achieve the desired breeding success, it has been designed to be easily adapted if necessary (e.g. ledges can be altered, additional nesting cabins added, and the overall structure can be raised, lowered, realigned, or extended). Further details on the location, design and monitoring of the onshore ANS at Gateshead are provided in Appendix B of this document.

259. As outlined in Appendix B**,** monitoring has been ongoing since installation at the Gateshead ANS to assess the colonisation and productivity of the structure compared to other urban artificial nesting sites in the Tyne area. The onshore ANS installed by the Applicants (the 'Kittiwakery') is showing positive signs of colony establishment (Stevenson *et al.,* 2024). Although no chicks have yet been produced on this onshore ANS, there were 164 individual observations made of kittiwake present between 1st May and 24th July 2024, including displaying / calling for a mate, pair courtship and bonding, copulation, nest building, and nest defence. Kittiwake were also observed on the ANS sleeping / resting and undertaking self-maintenance such as preening. In addition, two trail cameras were installed, preliminary estimates suggest circa 500 videos have further captured additional kittiwake activity and behaviours, similar to those observed during manual surveys.

6.4.2 Scale

260. The Applicants' existing onshore ANS can currently support up to 240 breeding pairs of kittiwakes, with planning permission in place to expand to circa 480 breeding pairs, which is insufficient to deliver the Projects' potential compensation requirement for kittiwakes of 510 to 1,057 pairs per annum (upper 95% CI 1,007 to 2,085 pairs per annum)[9] (see section 5.3).

[9] Based on the Hornsea Four compensation calculations (see section 5.1) and assuming 100% adult kittiwake during the breeding season.

261. Several OWF projects currently in the consent process also have an interest in the Applicants' onshore ANS at Gateshead to potentially deliver their own compensation requirements for kittiwake. These include Rampion 2 and Five Estuaries which have both submitted without prejudice derogation cases for their predicted impacts to FFC SPA kittiwake (Rampion Extension Development (RED), 2023; Five Estuaries Offshore Wind Farm Limited (VE OWFL), 2024a).

262. The predicted impact of Rampion 2 and Five Estuaries OWFs is 0.8 kittiwake per annum each (1.6 birds per annum in total) (RED, 2024; VE OWFL, 2024b). VE OWFL is looking to secure space for between six to 16 pairs depending on the compensation ratio applied (Five Estuaries OWFL, 2024b) while RED is seeking to secure space for between two and 33 pairs depending on a range of factors, including calculation approach and compensation ratio applied (RED, 2024). Should a defined share of the Applicants' existing onshore ANS be allocated to one or both OWF projects, there would be a small reduction (8 – 49 pairs) in the capacity potential available to the Applicants should this need to be relied upon.

263. North Falls OWF also has expressed an interest in obtaining nesting space on the Applicants' onshore ANS to compensate for their predicted impacts to FFC SPA kittiwake which are believed to be in the range of those predicted for Rampion 2 and Five Estuaries. North Falls OWF has submitted its DCO application, and the Applicants continue to engage with them regarding the scale of their compensation requirements.

264. The apportionment of nests between OWF developers is subject to commercial agreements that are yet to be confirmed. Nonetheless, there would remain sufficient capacity for this onshore ANS to potentially make a notable contribution to the Applicants' overall compensation requirement should it be required.

6.4.3 Delivery Mechanism

265. Given that the Applicants' existing onshore ANS is already implemented, this measure is considered to be readily available to deliver a proportion of predicted compensation requirements for the Projects if required. The land on which the tower is located has been leased for 60 years, in line with the seabed lease for the Projects. This timeframe will adequately cover the duration for which compensation will be required (i.e. the operational lifetime of the Projects).

266. Should Rampion 2, North Falls and VE OWFL need to rely on the Applicants' existing onshore ANS to deliver compensation then this would be delivered collaboratively via a formal collaboration agreement between the relevant parties. Letters of Intent between the Applicants and both RED and VE OWFL have been submitted as part of DCO applications for Rampion 2 and Five Estuaries, indicating the Applicants' willingness to allocate capacity of its existing onshore ANS to third parties should they be required to deliver compensation.

267. Onshore ANS is not an approved strategic compensation measure for kittiwake and therefore there is no strategic mechanism for the delivery of this measure.

7 Highly Pathogenic Avian Influenza (HPAI)

268. In 2022 Highly Pathogenic Avian Influenza (HPAI) adversely affected survival and productivity within seabird colonies across the UK, and investigations are underway to determine the long-term effects on species' populations.

269. The success of compensatory measures intended to increase available nesting spaces (e.g. onshore and offshore ANS) is based on an assumption that nesting site availability can be a limiting factor in certain parts of their range and also on the negative relationship between productivity and colony size observed at very large colonies such as FFC SPA (i.e. a density-dependent effect). There is also an assumption that there is a sufficient pool of kittiwake recruits to take up additional nesting spaces on ANS which would otherwise either not breed at all or would have lowered productivity due to intraspecific competition at a large colony.

270. Should it be identified that kittiwake populations have been significantly reduced as a result of HPAI such that there are insufficient numbers of immature kittiwakes seeking to occupy available nesting spaces, then compensatory measures aimed at providing additional nesting sites may prove less effective in the short term.

271. Currently, there is some uncertainty regarding the size of the potential pool of kittiwake recruits as well as the scale of the impact of HPAI on kittiwake populations. Ongoing monitoring of ANS currently in place as well as natural colonies that have suffered from the effects of HPAI will provide valuable evidence in this respect. This will help evidence the long-term efficacy of ANS as compensation for offshore wind in light of future potential HPAI outbreaks. To date, the evidence does not appear to indicate that kittiwake populations in the southern North Sea have been significantly affected (Butcher *et al.* 2023).

8 Funding

272. Funding information for the compensatory measures outlined in this plan, including those to be delivered on a project-led basis, collaboratively and / or strategically can be found in **Volume 4, Funding Statement (Revision 4)** [REP4-013].

273. The provision of ANS is secured by the DCO, and two ANS have been identified as potentially necessary to deliver the strategic compensation for kittiwake within **Volume 6, KSCP** [APP-053]. One structure will be delivered by the Applicants with shared nesting space apportioned to ODOW. This will be delivered alongside a second structure to be implemented by ODOW with shared nesting space apportioned to the Applicants. The Applicants offshore ANS will be delivered on a project-led basis and as such, the Applicants will cover the full cost of this structure. Likewise, ODOW will be responsible for its own design, development, installation and operational costs of their ANS (subject to any alternative express provisions in the collaboration Agreement).

274. Based on the information presented in **Volume 4, Funding Statement (Revision 4)** [REP4-013], the SoS can be satisfied that the financial viability of the Projects will not be compromised by the delivery of all or some of the compensatory measures proposed by the Applicants and set out in the compensation plans and that these compensatory measures can be financed through the existing financial arrangements in place to develop, construct and operate the Projects.

9 Summary

275. **Table 9-1** provides a summary of the Applicants' offshore ANS compensation measures for kittiwake and outlines the details that have been established for application and those aspects that will be developed following DCO submission.

276. The Applicants plan to deliver kittiwake compensation via a package of measures which are centred around a single project-led offshore ANS. Resilience (and additional compensatory capacity) is provided through the provision of reciprocal shared nesting spaces on the Outer Dowsing offshore ANS, as well as by the Applicants onshore ANS (the 'Kittiwakery') at Gateshead. These measures combined provide confidence, and security in the viability of the compensation scheme as a whole to mitigate potential impacts related to the Projects.

Table 9-1 Summary Of The Applicants Compensation Proposal For Kittiwake In Relation To Natural England's Checklist Criteria

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
a) What, where, when: clear and detailed statements regarding the location and design of the proposal.	What – Two offshore ANS to be delivered the following mechanisms: • A single project-led ANS developed by the Applicants. • A single ANS developed by ODOW. • The two projects will share nesting spaces to provide reciprocal resilience across the compensation measure (an MoU has been signed by the two parties), • Therefore delivering the strategic measure and approach in line with the KSCP, collaboratively through the installation of individual project-led ANS. • and / or strategically via a Strategic Compensation Fund (e.g. MRF). Where – The location of the offshore ANS is dependent on the delivery mechanism.	What – The Applicants existing onshore ANS at Gateshead – the 'Kittiwakery'. Where – Gateshead, River Tyne's southern bank. The onshore ANS was constructed next to the Saltmeadows tower which supports approximately 100 pairs of breeding kittiwake. When –The Applicants onshore ANS at Gateshead was installed in 2023.

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
	The locations of offshore ANS to be delivered by ODOW and the Applicants are presented on **Figure 6-7** and are discussed in section 6.3.4. A single candidate site (Site 6a) has been subject to geophysical surveys which have confirmed its suitability for ANS installation. Geotechnical surveys are planned for summer 2025 which will provide data to allow a decision on the final location within Site 6a to be made. Further information is presented in section 6.3.4. Strategic delivery of offshore ANS would be overseen by Defra in collaboration with COWSC and would be delivered alongside project led measures. When – Both offshore ANS would be installed at least two breeding seasons prior to operation of the Projects.	
b) Why and how: ecological evidence to demonstrate compensation for the impacted site feature is	As evidenced by the SoS's decision for the Hornsea Four Project, offshore ANS is an accepted compensation measure for FFC SPA kittiwake and has also recently been approved as a strategic compensatory measure (Defra, 2024a). Offshore ANS is therefore	Onshore ANS are proven to support breeding kittiwake. The Applicants onshore ANS is located adjacent to an existing ANS (Saltmeadows tower) that supports over 100 kittiwake pairs.

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
deliverable in the proposed locations.	considered to be both feasible and implementable. NIRAS on behalf of The Crown Estate identified six ecologically suitable offshore AoS for implementation of ANS with a further five identified by ODOW and one by Hornsea Four Project (Appendix D of the **Volume 6, KSCP** [APP-053]). Several of these sites were taken forward by the Applicants alongside newly identified AoS for further appraisal. A preferred site (Site 6a) has been identified by the Applicants for development. This site has been chosen following a rigorous site selection process in consultation with key stakeholders including Natural England. A geophysical survey at Site 6a is complete and has confirmed suitable seabed conditions for the installation of an ANS.	
c) For measures on land, demonstrate that on ground construction deliverability is secured and not just the requirement to deliver in the DCO e.g., landowner	As outlined in section 6.3.8, work is in progress to secure the deliverability of offshore ANS on either a collaborative or project-led basis. This includes the necessary agreements, consents, licences and leases. The Applicants plan to submit a Marine Licence and Seabed Lease applications for the offshore ANS within the examination period. Further updates with	The Applicants existing onshore ANS is already implemented and is therefore readily available to deliver a proportion of predicted compensation requirements for the Projects if required.

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
agreement is in place. For measures at sea, demonstrate that measures have been secured e.g. agreements with other sea or seabed users.	be provided to the Examining Authority as appropriate during the course of DCO examination.	
d) Policy/legislative mechanism for delivering the compensation	The mechanism is outlined in **Volume 6, Habitats Regulation Derogation: Provision of Evidence** [APP-051].	
e) Agreed DCO/DML conditions	A draft schedule for FFC SPA kittiwake compensation is provided within **Volume 3, Draft DCO (Revision 10)** [REP8-003]. The condition wording proposed is still to be agreed upon with the relevant statutory stakeholders.	
f) Clear aims & objectives & links to the conservation objectives of the site or feature.	The Applicants aim to compensate for the kittiwake losses incurred as a result of mortality associated with the development of the Projects through the provision of new nesting sites either onshore or offshore. This aligns with the conservation objective for FFC SPA of maintaining or restoring the population of the qualifying feature (breeding kittiwake) (section 4.2).	

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
g) Mechanism for further commitments if the original compensation objectives are not met - i.e., adaptive management.	**Volume 6, KSCP** [APP-053] outlines several potential adaptive management measures and possible trigger points that were discussed with the KSCP Steering Group. Adaptive management options and approaches are being refined by the Applicants. Measures being considered are detailed in **Outline Kittiwake CIMP (Revision 2)** [REP4-020]. The Applicants have sought to align with this approach within this project level plan and as such, specific details regarding adaptive management are being developed in consultation with the relevant stakeholders and will be presented within the KSIMP and updates to the project level **Outline Kittiwake CIMP (Revision 2)** [REP4-020].	
h) Clear governance proposal for the post-consent phase (e.g. ToR agreed)	The Applicants offshore ANS proposal aligns closely with the information provided in **Volume 6, KSCP** [APP-053] which was developed in accordance with the ToR for the Kittiwake Steering Group. Under these ToR, the Kittiwake Steering Group will continue to operate until all obligations have been discharged, including all post-consent requirements. It is currently unclear whether a separate governance process will be required for the delivery of compensation in accordance with the project-level derogation case (in addition to that required at the plan level). Nonetheless, a separate governance process has been outlined with respect to this project-level plan subject to the SoS confirming whether this is required. Further details will be agreed with the relevant stakeholders	Installation of the onshore ANS was completed in 2023. Further details will be provided post-consent in the KSIMP and project level Kittiwake CIMP (if required).

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
	and provided post-consent in the KSIMP and project level Kittiwake CIMP (if required).	
i) Ensure development of compensatory measures is open and transparent	The Applicants have actively participated in the Kittiwake Steering Group during the pre-application phase to support development of the **Volume 6, KSCP** [APP-053]. This engagement has informed the Applicants' approach to compensation at the project level and has been supplemented with additional engagement with the kittiwake ETG, Defra and PINS in respect of the Applicants project level offshore ANS proposal. Key details in accordance with the NE Checklist, including an outline implementation and delivery roadmap (see section 6.3.8) is presented in this project level plan. Stakeholder engagement will continue post-application to support further development of the Applicants offshore ANS proposal.	The planning application process for the Applicants onshore ANS at Gateshead was undertaken in consultation with local and statutory stakeholders. All planning documents are publicly available (Gateshead Council, 2022 - DC/22/01188/FUL).
j) Timescales for implementation & how quickly the measures will contribute to the network	Both offshore ANS would be installed at least two breeding seasons prior to operation of the Projects.	Installation of the onshore ANS was completed in 2023.

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
k) Commitments to ongoing monitoring of measure performance against specified success criteria.	The Applicants have committed to commence monitoring the first breeding season following implementation of the measure. Monitoring would continue post-construction and at least until the success of the compensation has been demonstrated. The criteria against which success will be determined are being developed in consultation with the relevant stakeholders, with updates provided in the **Outline Kittiwake CIMP (Revision 2)** [REP4-022].	Monitoring has been ongoing since installation in 2023 to assess the colonisation and productivity of the onshore ANS structure. Should this measure need to be relied upon either as compensation or adaptive management, a monitoring programme would be agreed in consultation with the relevant stakeholders and presented within the KSIMP and project level Kittiwake CIMP (if required).
l) Proposals for ongoing sign off' procedure for implementing compensation measures throughout the lifetime of the project, including implementing feedback loops from monitoring.	A robust sign-off procedure will be developed post-consent in consultation with the relevant stakeholders and presented within the KSIMP and project level Kittiwake CIMP (if required).	Should this measure need to be relied upon either as compensation or adaptive management, a robust sign-off procedure would be agreed upon in consultation with the relevant stakeholders and presented within the KSIMP and project level Kittiwake CIMP (if required).

NE Compensation Criteria	Offshore ANS (primary compensation measure)	Onshore ANS (supporting or adaptive management measure)
m) Commitment to continued annual management of the compensation area throughout the lifetime of the project	The Applicants have committed to regular management and maintenance of its offshore ANS throughout the lifetime of the Projects. Where there is room for improvements, modifications will be undertaken to help maximise the potential of the site. Further details regarding the maintenance programme for offshore ANS are provided in the **Outline Kittiwake CIMP (Revision 2)** [REP4-022].	The Applicants are committed to managing and maintaining its onshore ANS at Gateshead for the lifetime of the Projects. Where there is room for improvements, modifications will be undertaken to help maximise the potential of the site. Should this measure need to be relied upon either as compensation or adaptive management, information on monitoring and maintenance will be provided in the KSIMP and project level Kittiwake CIMP (if required) post-consent.

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Appendix A – Letter of Comfort from The Crown Estate

1 St James's Market
London
SW1Y 4AH

Tel:
Web: [redacted]

[redacted]
Development Project Manager
RWE Renewables UK Dogger Bank South (East) Limited
RWE UK Dogger Bank South (East) Limited
Windmill Hill Business Park,
Whitehill Way, Swindon, Wiltshire, SN5 6PB

9th July 2025

By Email Only

RE: Dogger Bank South Offshore Wind Farms Project Habitats Regulations Assessment Compensation Measures

SUBJECT TO CONTRACT

Dear [redacted]

The Crown Estate Commissioners (referred to in this letter as "we" or "us") have been approached by RWE Renewables UK Dogger Bank South (West) Ltd and RWE Renewables UK Dogger Bank South (East) Ltd (referred to in this letter as the "Applicants" or "you") to seek confirmation that, for specific areas of seabed and foreshore, those areas (i) fall within our ownership or (ii) are areas over which we can grant rights, in order to deliver compensation measures identified in the Development Consent Order ("DCO") application for the Dogger Bank South Offshore Wind Farms Project. This is sought by the Applicants as they must provide sufficient confidence to the Secretary of State that the compensation measures required by the Project are available, securable and deliverable. We are responding on the matter of whether rights are currently available from us. It is for the Applicants, and not The Crown Estate, to demonstrate that they are securable and deliverable.

About The Crown Estate

The Crown Estate's management powers on the foreshore and within 12 nautical miles

The territorial seabed (which extends to **12 nautical miles** as measured from the baselines established by Order in Council), and around half of the foreshore of, England, Wales and Northern Ireland belong to the Crown. Such territorial seabed and foreshore falls under the management of The Crown Estate by virtue of the Crown Estate Act 1961. As a result, subject to certain exclusions, TCE manages the grant of interests within the same, in much the same way as TCE manages on-shore assets, where such land/interests vest in TCE on behalf of the Crown.

The Crown Estate's management powers outside 12 nautical miles up to the outer limit of the "Renewable Energy Zone"

Beyond the territorial waters, by virtue of the Energy Act 2004 and secondary legislation, **within the area known as the "Renewable Energy Zone" (or the "REZ")**, the right to exploit the Renewable Energy Zone for the production of energy from water or winds or for other purposes connected with such exploitation belongs to the Crown. These rights are for TCE to manage on

behalf of the Crown (pursuant to the Crown Estate Act 1961 (as supported by other sources)) in relation to the REZ adjacent to England, Wales and Northern Ireland.

About Dogger Bank South Offshore Wind Farms Project

We understand that The Dogger Bank South Offshore Wind Farms project comprises the two offshore wind farms (Dogger Bank South West and Dogger Bank South East), and associated offshore and onshore infrastructure including offshore and onshore high voltage electricity cables, onshore and offshore electricity substation(s), connection(s) to the National Grid and ancillary and temporary works. Compensation has been concluded to be required in relation to certain effects of its development in-combination with other projects and we understand that the Applicants are considering a number of measures including Offshore Artificial Nesting Structure(s).

Dogger Bank South Offshore Wind Farms Project Habitats Regulations Assessment Offshore Artificial Nesting Structures ("Offshore ANS")

We understand that:

(a) For kittiwake (*Rissa tridactyla*) from the Flamborough and Filey Coast Special Protection Area (FFC SPA), the Applicants' Volume 6, Report to Inform Appropriate Assessment (RIAA) (application ref: 6.1) concludes that Adverse Effects On Integrity (AEoI) cannot be ruled out as a result of predicted collision mortality, when considered in-combination with other offshore wind farms (OWFs). This conclusion is consistent with the outcome of The Crown Estate's Plan Level Habitats Regulations Assessment.

(b) The Applicants have put forward, as part of their consent application, measures to compensate for the predicted impacts of the Projects, which are described in this Project-Level Kittiwake Compensation Plan. This document forms part of the Applicants' overarching Volume 6, Habitats Regulations Derogation: Provision of Evidence (application ref: 6.2).

(c) the use of Offshore ANS forms the primary compensation measure for kittiwakes. The Applicant is therefore considering constructing an Offshore ANS **within the REZ** to provide additional nesting space for relevant bird species and to encourage formation of new offshore colonies.

The Crown Estate confirms that, as at the date of this letter, we have the ability to grant the rights which we would anticipate being required in respect of the construction of the proposed Offshore ANS site(s) **within the REZ**, where:

(a) the grant of such rights would not be inconsistent with existing third-party rights and/or interests in the Offshore ANS site(s); and
(b) the construction of the Offshore ANS site(s) does not interfere with public rights, save to the extent permitted by law (which, where applicable, may be by the grant of

relevant consents and/or permissions from, and/or the adoption of measures by, the relevant authorities),

and such grant would be subject to:

(c) securing appropriate proximity checks results as regards the rights of others;
(d) the Applicants having obtained all necessary consents and/or permissions from the relevant authorities (and compliance with all relevant legislation); and
(e) contract and commercial agreement.

The Crown Estate Summary Position Statement

It is understood that the Applicants would secure the necessary consents to deliver the compensation measures, and that the implementation of the compensation measures would be conducted in accordance with the relevant compensation plan and post-consent Compensation Implementation and Monitoring Plan (CIMP) document. Furthermore, the compensation measures would follow established standards and best practice guidelines and would be conducted in close collaboration with stakeholders and restoration experts.

The position of The Crown Estate, as to the availability of the relevant interests and/or rights from us, is as set out above. For the avoidance of doubt:

1. we are not yet in a position to enter into any legal documentation with the Applicants but the Applicants has requested this letter of comfort as an interim measure to assist with the DCO process;
2. subject to the above-mentioned matters and subject to contract, we can confirm that it is our current intention to continue to work with the Applicants in good faith to assist the Applicants in taking forward their preferred Site in which compensations measures can be facilitated within the necessary timescales, pending agreement of terms. Since our letter of comfort dated 24th October 2026, the Applicants have engaged in active discussions with The Crown Estate on their Lease application, have secured a Seabed Survey Licence from us (Ref OW_DBS_01) for survey activity, and shared the location of their preferred Site
3. this letter is intended to be a statement of The Crown Estate's present intention only and accordingly shall not be construed as constituting a promise or warranty as to future conduct; and
4. nothing expressed or implied in this letter is intended to create legal relations between The Crown Estate, the Applicants and/or any third party. In addition, this letter does not constitute any variation to the terms of any of the Project's documents nor shall it be treated as the provision of consent.

[redacted]

Head of Nature & Environment (Marine)

Appendix B - Onshore Kittiwake Tower Note

DBS Offshore Wind

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Appendix B - Onshore Kittiwake Tower 'Kittiwakery' Gateshead, Tyne and Wear

Document Date:	29 October 2024
Revision Number:	01
Classification:	Unrestricted

RWE MASDAR

Company:	**RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited**	Asset:	**Development**
Project:	**Dogger Bank South Offshore Wind Farms**	Sub Project/Package	**Consents**
Document Title or Description:	Onshore Kittiwake Tower 'Kittiwakery' Gateshead, Tyne and Wear		
Document Number:	005303970-01	Contractor Reference Number:	

Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	29/10/2024	First Issue	RHDHV	RWE	RWE

Contents

Plates

Glossary

Term	Definition
Dogger Bank South (DBS) Offshore Wind Farms	The collective name for the two Projects, DBS East and DBS West.
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).

Acronyms

Acronym	Definition
ANS	Artificial Nest Structures
DBS	Dogger Bank South

1 Onshore Kittiwake Tower 'Kittiwakery' Gateshead, Tyne and Wear

1.1 Overview and Summary of 2024 monitoring results

1. In February 2023, a kittiwake Artificial Nest Structures (ANS), referred to as 'Kittiwakery', was installed at Gateshead, Tyne and Wear, by RWE for the DBS projects. The ANS was installed as a pilot study to a) provide early compensation for kittiwake for the DBS Projects, b) trial different nesting boxes and ledge designs; c) develop monitoring techniques; and d) inform success criteria, including identifying key indicators of early colony establishment.

1.1.1 Location and Description

2. The Kittiwakery ANS is a four-sided tower located adjacent to the south shore of the River Tyne in Gateshead (Pate1-1). It is installed close to an existing ANS on Salt Meadows, Gateshead which has been successfully colonised by kittiwake.

3. The four-sided tower was installed in February 2023, with current capacity for circa 240 breeding kittiwake pairs. The granted planning permission (refence - DC/22/01188/FUL) allows an increase in capacity to circa 480 pairs through installation of additional breeding ledges below the currently installed nesting module. The Kittiwakery is internally accessible to surveyors, and allows the installation of monitoring equipment (such as cameras) and provides an ideal opportunity to trial monitoring techniques in a less challenging onshore environment, therefore providing an ideal test bench for future monitoring programmes offshore.

1.1.2 Monitoring Results

4. The Kittiwakery was monitored between February and August throughout the 2023-2024 breeding seasons. Decoy nests were added in 2023, and further nests and decoy kittiwakes and chicks were added in 2024 to encourage prospecting kittiwake to investigate the Kittiwakery as a potential breeding site.

5. In 2023, kittiwake were observed visiting the Kittiwakery for brief durations (Stevenson et al., 2023), however during the 2024 breeding season there was a considerable increase in kittiwake activity (Stevenson et al., 2024), with kittiwake observed present for lengthy durations, indicative of early colony establishment.

6. Although no eggs were laid, there were 164 individual manual observations made of kittiwake present between 01 May and 24 July 2024, including displaying/calling for a mate, pair courtship and bonding, copulation, nest building, and nest defence (Plate 1-2). Kittiwake were also observed on the Kittiwakery sleeping/resting and undertaking self-maintenance such as preening.

7. In addition, two motion detection cameras were installed on two linear ledges (giving partial coverage of the Kittiwakery). Preliminary analysis suggests circa 500 video observation of kittiwake activity during night-time hours and have identified behaviours similar to those observed during manual surveys.

1.1.3 Next Steps

8. The Kittiwakery has been discounted as a primary measure for kittiwake compensation by the **Kittiwake Strategic Compensation Plan** [APP-053] which has advised that two offshore ANS are required to compensate for potential kittiwake impacts of the Round 4 Plan. DBS will lead on the design, consenting and build out of one of these offshore ANS.

9. The Kittiwakery will continue to be monitored to allow study of different designs, monitoring techniques and inform success criteria. It may also be suitable as an adaptive management measure to supplement compensation provided by the proposed offshore ANS. DBS is also in discussion with other pre-construction offshore wind farms with regard sharing the kittiwake compensation benefits on a strategic basis.

Plate 1-1 External and internal view of Kittiwakery

Plate 1-2 Kittiwakes on Kittiwakery in 2024, displaying different behaviour (clockwise from top) preening, nest defence behaviour, copulation and nest maintenance (of decoy nest)

1.2 References

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RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire, SN5 6PB