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

Outline Kittiwake Compensation Implementation and Monitoring Plan (Revision 3) (Clean)

October 2025

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Company:	**RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited**	Asset:	**Development**
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Revision Change Log			
Rev No.	**Page**	**Section**	**Description**
03	All	All	Document reference updates
03	8	1	Timescale update
03	13	3	Timescale update
03	13-14	3	Table 3-1 – consultation record update
03	14	3	Text relating to consultation updated
03	17	4.1.1	Clarification on wording regarding nesting space capacity on ANS.
03	18-19	4.1.2	Site selection and Marine Licence update
03	21-24	4.2	Table 4-1 updates. Row removed from Table 4-1 following design update to include a 7-degree overhang within the ANS design. Additional detail added regarding monitoring.
03	25-27	4.2	ANS design details updated, Table 4-2 and Figure 4-2 added. Summary of Kittiwake Steering Group meeting 9th October 2025 added.

Contents

Tables

Figures

Glossary

Term	Definition
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Dogger Bank South Offshore Wind Farms	The collective name for the two Projects, DBS East and DBS West.
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.
Kittiwake Strategic Compensation Plan	Document produced as part of The Crown Estates 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 [UK National Site Network] 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 [Habitats Regulations Assessment] process which is required as a matter of law*".
Kittiwake Steering Group	A strategic steering group for kittiwake compensation formed by The Crown Estate. 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.
Round 4 Plan	The Fourth Offshore Wind Seabed Leasing Round undertaken by The Crown Estate and adopted in January 2023.

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
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 Offshore Wind Farms).

Acronyms

Term	Definition
AEoI	Adverse Effect on Integrity
ANS	Artificial Nesting Structure
AON	Apparently Occupied Nests
AoS	Area of Search
CIMP	Compensation Implementation and Monitoring Plan
COWSC	Collaboration on Offshore Wind Strategic Compensation
CPT	Cone Penetrometer Tests
CTV	Crew Transfer Vessel
DBS	Dogger Bank South offshore wind farms
DCO	Development Consent Order
Defra	Department for Environment Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
EPCI	Engineering, Procurement, Construction, Installation and Commissioning
ETG	Expert Topic Group
FFC SPA	Flamborough and Filey Coast Special Protection Area
HPAI	Highly Pathogenic Avian Influenza
HRA	Habitats Regulations Assessment
HSE	Health, Safety and the Environment
IMP	Implementation and Monitoring Plan

Term	Definition
IP	Interested Parties
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 Compensation Measures
MCA	Maritime and Coastguard Agency
MMO	Marine Management Organisation
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MRF	Marine Recovery Fund
NFFO	National Federation of Fishermen's Association
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind
OWF	Offshore Wind Farm
RSPB	Royal Society for Protection of Birds
SNCB	Statutory Nature Conservation Bodies
SoS	Secretary of State
SOV	Survey Operations Vessel
UK	United Kingdom
W2W	Walk to Work

1 Introduction

1. RWE Renewables UK Dogger Bank South East Limited and RWE Renewables UK Dogger Bank South West Limited ('the Applicants') have applied 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. This document provides an initial outline for the Kittiwake Compensation Implementation and Monitoring Plan (CIMP) which is being developed by the Applicants during DCO examination and determination period. This document will be developed as required post- the examination period to reflect input from Interested Parties (IPs) and finalised post-DCO consent in consultation with the proposed Kittiwake Compensation Steering Group (KCSG), should consent for the Projects be granted and compensation for kittiwake be required.

3. The Kittiwake CIMP is being developed in accordance with the **Appendix 1 - Project Level Kittiwake Compensation Plan** [REP2-010] which provides a detailed account of the strategy supporting the potential compensation measures for kittiwake at the project level. The Kittiwake CIMP will be submitted to the Secretary of State for approval post-consent, as secured by Schedule 18 of the **Draft DCO (Revision 12)** [REP9-003].

4. The following sections of this outline plan set out the proposed content of the Kittiwake CIMP. The Kittiwake CIMP will be structured as follows:

    - Section 1: Introduction
    - Section 2: Background
    - Section 3: Consultation
    - Section 4: Offshore Artificial Nesting Structure (ANS)
        - Section 4.1: Scale and Location of compensation
        - Section 4.2: Design of Offshore ANS

[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.

- Section 4.3: Delivery Mechanism
- Section 4.4: Maintenance, Monitoring and Adaptive Management
- Section 4.5: Reporting
- Section 4.6: Programme for Implementation and Delivery
- Section 4.7: Discharge of Consent Condition

1.1 Implications of The Crown Estate's Round 4 Habitats Regulations Assessment Derogation

5. It should be noted that the Projects are part of the Fourth Offshore Wind Seabed Leasing Round (the 'Round 4 Plan') and are therefore subject to The Crown Estate's Round 4 derogation case. In accordance with this and their Agreement for Lease, the Projects are required to deliver compensation strategically alongside Outer Dowsing Offshore Wind Farm to offset predicted impacts on the Flamborough and Filey Coast Special Protection Area (FFC SPA) breeding kittiwake feature.

6. The Crown Estate has prepared in consultation with a strategic Kittiwake Steering Group (hereafter referred to as 'the Kittiwake Steering Group'), a **Round 4 Kittiwake Strategic Compensation Plan (KSCP)** [APP-053] which details the compensatory measures to be delivered under the Round 4 derogation. In accordance with the **KSCP** [APP-053], the Crown Estate is required to submit a Kittiwake Strategic Implementation and Monitoring Plan (KSIMP) to the Secretary of State for the Department for Energy Security and Net Zero (DESNZ) prior to the operation of any wind turbine of Outer Dowsing and the Dogger Bank South Offshore Wind Farms. Engagement with the Kittiwake Steering Group following publication of the **KSCP** [APP-053] (4th April 2025) has aided the development of refined ANS design details and adaptive management measures provided within this document – further details are provided in section 3.

7. The Applicants provided an **Outline Kittiwake Compensation Implementation and Monitoring Plan (Revision 2)** [REP4-022] during DCO examination in accordance with a 'Request for information' from the Examining Authority in a Rule 17 letter issued 3rd March 2025 [PD-016]. This approach is supported by Natural England who sought a populated Kittiwake CIMP in their Risk and Issues Log (Revision 2) [AS-161] following the publication of Defra's Written Ministerial Statement confirming that offshore Artificial Nesting Structure(s) (ANS) should be delivered at a project level. Subject to clarification from the Secretary of State, the Applicants have assumed that for the purpose of this DCO application, a Kittiwake CIMP and KCSG will be required.

2 Background

8. For kittiwake *Rissa tridactyla* from the FFC SPA, the Applicants' **RIAA HRA Part 4 of 4 (Revision 3)** [AS-086] concludes that adverse effect on the integrity (AEoI) of a European site 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 HRA with respect to FFC SPA kittiwake and the Secretary of State's (SoS) conclusion for recently consented offshore wind farm (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). As such, the Applicants are progressing, as part of their DCO consent application, a single measure to compensate for the predicted impacts of the Projects: delivery of an offshore ANS. This document forms part of the Applicants' overarching **Habitats Regulations Derogation: Provision of Evidence** [APP-051].

9. 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, 2018). Natural England (2023) 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.

10. Through engagement with the Kittiwake Steering Group, and consultation with Statutory Nature Conservation Bodies (SNCBs) and key stakeholders including Natural England, Department for the Environment, Food and Rural Affairs (Defra), Royal Society for Protection of Birds (RSPB), the Marine Management Organisation (MMO) and Joint Nature Conservation Committee (JNCC), the Applicants have developed a scheme to compensate for potential impacts to FFC SPA kittiwake.

11. The measure identified as being most suitable for the Projects to deliver is implementation of an offshore ANS in English Waters of the North Sea. 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.

12. As evidenced in the **KSCP** [APP-053], kittiwake are known to readily utilise man-made structures for nesting both onshore and offshore. ANS both onshore and nearshore have been installed in recent years for the purpose of delivering compensation for kittiwake. Although to date, no offshore (>1km) ANS have been implemented specifically for this purpose, there are successful examples of onshore structures (e.g. Saltmeadows tower), and nearshore structures showing encouraging signs of success (Hornsea Project 3).

13. 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).

14. In February 2024, the SoS for Defra approved the following compensatory measures as recommended by Collaboration on Offshore Wind Strategic Compensation (COWSC) for inclusion within the library of strategic compensatory measures (LoSCM) and for strategic delivery as compensation for offshore wind projects (Defra, 2024):

- 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.

15. The delivery of offshore ANS as a compensatory option has also been included as a centrally approved measure by DESNZ (DESNZ, 2025) within guidance regarding strategic compensation in relation to the Marine Recovery Fund (MRF), and in Defra's Written Ministerial Statement (Defra, 2025). The inclusion of this option in such publications highlights confidence in this measure by UK Government.

16. In addition to delivering an offshore ANS, the Applicants have implemented an onshore ANS in February 2023 at Gateshead, on the site adjacent to the existing Saltmeadows tower, to increase kittiwake breeding success in the area. The final design of this structure incorporated many of the design principles outlined in the **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 the **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 4)** [REP2-010].

17. This structure was installed ahead of the **KSCP** [APP-053] publication and was delivered in good faith with the intention that this structure could contribute to 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 and is showing positive signs of colony establishment. As such, it is considered to be providing ecological value to the North Sea kittiwake population. The designed lifespan for the onshore ANS is 60 years.

18. This Kittiwake CIMP sets out the delivery proposal for the agreed compensatory measure and provides an outline of the measure which will form the basis of the final Kittiwake CIMP to be delivered to the SoS.

3 Consultation

19. This section summarises all relevant consultation undertaken in the development of the Outline Kittiwake CIMP. This section contains details surrounding any key decisions, agreements, and where relevant any outstanding issues under discussion (with clarity as to the steps necessary to resolve any such matters) for the post-DCO submission period. 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 the **KSCP** [APP-053], to inform the **Appendix 1 - Project Level Kittiwake Compensation Plan** [REP2-010] and this Outline Kittiwake CIMP. Feedback from the Kittiwake Steering Group and other project-level consultations has informed the development of the Projects' kittiwake compensatory measures.

20. Section 2 of the **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 the **KSCP** [APP-053]. Following publication of the **KSCP** [APP-053] by The Crown Estate, a single Kittiwake Steering Group meeting has been convened with the Applicants present, this is detailed in **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 7)** [REP9-007] and in **Table 3-1**.

Table 3-1 Summary of Consultation Undertaken for the Projects.

Date	Consultee (s)	Details
4th April 2025	Kittiwake Steering Group (Natural England, JNCC, The Crown Estate, NIRAS)	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.
21st August 2025	DBS Commercial Fisheries Working Group (CFWG)	This meeting introduced the Projects' offshore ANS requirements and next steps for kittiwake compensation, with attention to the site selection constraints analysis work package that led to the refinement of the wider areas of search (AoS) and resulted in the choice of Marine Licence application area.

Date	Consultee (s)	Details
11the September 2025	Eastern Green Link 5	The Applicants met with National Grid to introduce the site selection process for the offshore ANS – with attention to the constraints analysis work package that led to the refinement of the wider areas of search (AoS) and resulted in the definition of the Marine Licence application area.
16th September 2025	Natural England	The Applicant met with Natural England to provide updates regarding the offshore ANS and discussed matters related to offshore ornithology that remained outstanding between both parties at the close of the examination period. Updates focussed on the ANS Marine Licence application, related consultation with fishers, geotechnical survey completion, ANS design progression, and a status update on the Engineering, Procurement, Construction, Installation and Commissioning (EPCI) contract tender for the ANS.
9th October 2025	Kittiwake Steering Group (The Applicants, Natural England, JNCC, The Crown Estate, NIRAS)	The updated and progressed concept design base case for the offshore ANS was presented to members of the Kittiwake Steering Group, updates were discussed and next steps defined. Members were asked to provide feedback and to raise any points for consideration in the final stages of the concept design phase. The design process and concept design were well received. In addition to discussing ANS design, the Kittiwake Steering Group also considered suitable approaches to monitoring the offshore ANS, health and safety considerations in relation to design and monitoring, as well as potential adaptive management measures.

21. Stakeholder engagement has been undertaken during the pre-application, pre-examination, examination and determination phases to inform the Applicants' approach to compensation at the project level. In relation to offshore ANS delivery, there has also been significant engagement with relevant stakeholders. Details of engagement during pre-application and examination phases are provided in section 3.3 **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 7)** [REP9-007].

22. The Applicants are also active members of the OWIC derogation sub-group which is also working on strategic initiatives for the delivery of compensation for offshore wind.

23. Should consent for the Projects be granted and compensation for kittiwake be required, a KCSG is proposed. Ongoing engagement will be added to existing information in **Table 3-1** once the KCSG has been formed. The KCSG has not yet been formed as the quantum of compensation required is still under discussion via examination. Once the KSCG is formed, the outcome and influence of consultation on the final compensation scheme will be recorded in minutes and action logs and the final Kittiwake CIMP, which will be submitted post consent.

24. The main purpose of the KCSG will be to oversee the delivery of the kittiwake compensatory measures for the Projects and therefore discussion will be focused on:

- Project compensatory measure(s) design
- Monitoring programme
- Success criteria
- Adaptative management options
- Adaptive management triggers

4 Offshore Artificial Nesting Structure (ANS)

4.1 Scale and Location of Compensation

25. This section currently sets out the scale of compensation proposed - the quantum of compensation required is still under discussion. The final post-consent Kittiwake CIMP will detail the compensation quantum determined by the Secretary of State. This section will then also detail the specific location(s) at which the compensation will be delivered and how the necessary land / seabed rights in those location(s) have been / will be secured. The evidence base included in support of the Kittiwake CIMP will help inform these aspects. The results of any monitoring carried out pre-construction will also be detailed here.

4.1.1 Scale

26. In accordance with the **KSCP** [APP-053], the provision of offshore ANS is secured within the **Draft DCO (Revision 12)** [REP9-003]. To account for predicted impacts of the Round 4 offshore wind projects requiring compensatory measures for FFC SPA kittiwake combined (Outer Dowsing Offshore Wind (ODOW) and the Projects), two structures could accommodate the predicted upper limit of compensation required at the plan level. These two offshore ANS could more than compensate for even the most precautionary collision risk estimates for the Projects.

27. 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. 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 and the Hornsea Four approach. This is consistent with the **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. 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. Therefore, the Applicants consider Hornsea Four's approach to be more appropriate.

28. The Applicants 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).

Following the application of what the Applicants consider to be a suitable compensation ratio of 2:1, a final compensation requirement of 556 to 1,021 kittiwake pairs (upper 95% CI 1,096 to 2,015) is derived.

29. Further details regarding the Applicants' position on compensation quantum are provided in **Precaution in the Ornithology Assessment and Implications for Compensation Quantum** [REP3-030]. Should one or more of the three projects (DBS West, DBS East or Outer Dowsing) not proceed, the **KSCP** [APP-053] outlines that the number of structures required would be reviewed in light of the anticipated reduction in predicted collisions.

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

31. The Applicants concept design for the offshore ANS is scalable up to the point of design freeze ahead of fabrication, consequently the number of nesting spaces can be increased as required depending on the final compensation quantum methodology decision made by the SoS. This means that the topside structure can be increased in size to accommodate more nesting spaces with an upper limit exceeding that of the worst-case estimates of compensation quantum up until the point that it is built. In addition to the nesting spaces that will be provided by the offshore ANS, an additional contribution will be made to the overall compensation via the onshore ANS at Gateshead. The Applicants' existing onshore ANS can currently support up to 240 breeding pairs of kittiwakes, with planning permission in place to expand to support c.480 breeding pairs, which is insufficient to deliver all of the Projects' potential compensation requirement for kittiwake. Note that a proportion of the nesting spaces provided by the onshore ANS at its current capacity (240 spaces) are subject to discussion with other offshore wind projects, effectively reducing the amount of nesting benefits available to the Applicants.

32. The final scale of compensation required will be decided by the DESNZ Secretary of State in the Projects' DCO decision. This will take into account the appropriate compensation quantum calculation methodology and compensation ratio which will be applied to ensure that the measure fully offsets the predicted impact on FFC SPA kittiwake.

4.1.2 Location

33. As outlined in Appendix D of the **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'). Hard constraints included existing infrastructure or activities where the seabed is already occupied or leased for future development and therefore not available (e.g. wind farms, oil and gas platforms, cables and pipelines, aggregates, OWFs, protected monuments and wrecks, navigational channels, military areas etc, with appropriate buffers).

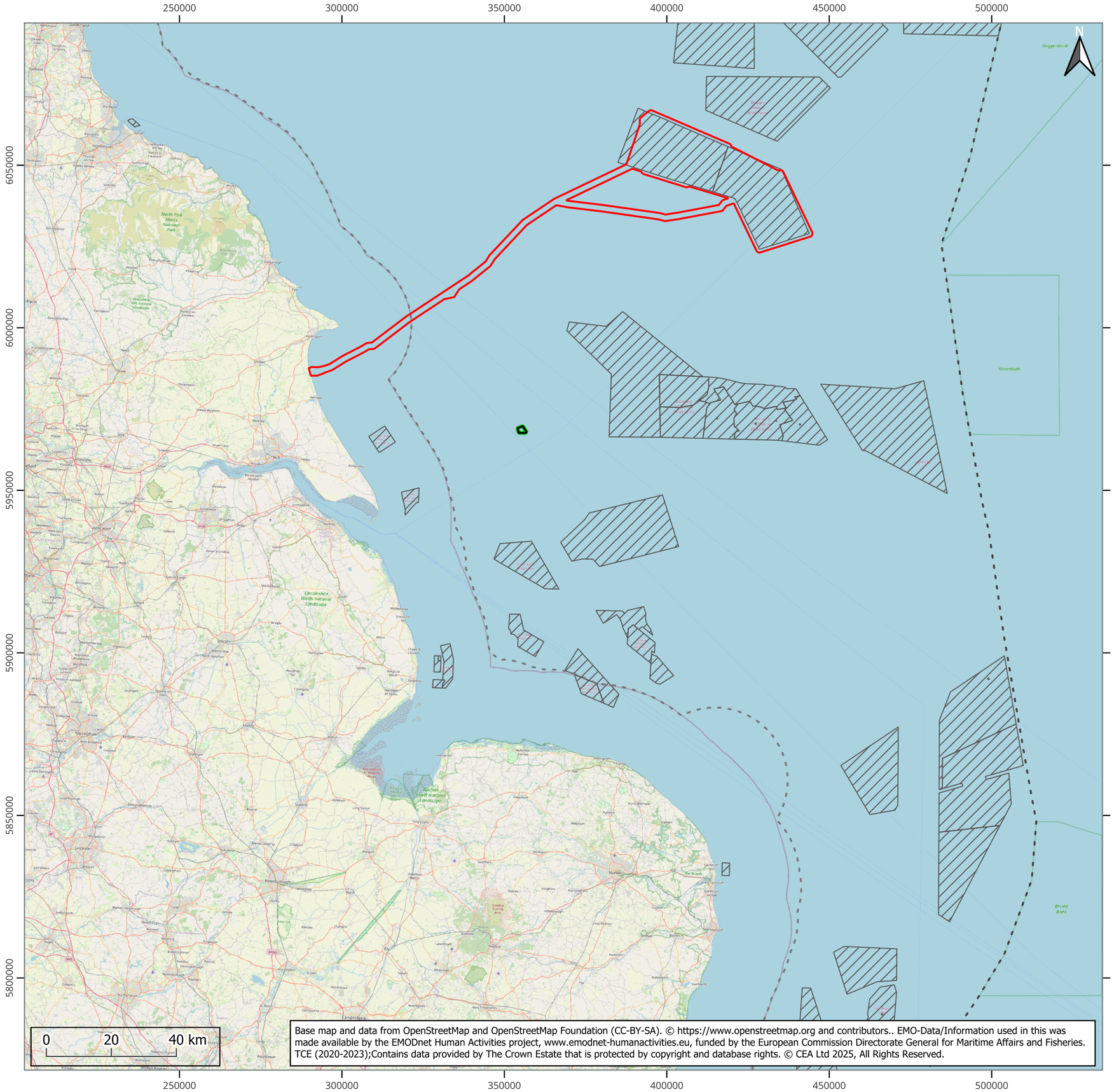
34. Further site selection work has been undertaken to support the Applicants' project-led offshore ANS proposal, building on the initial appraisal undertaken by NIRAS, to take account of additional constraints and identify a short list of AoS. Details of ANS site selection work undertaken by the Applicants are provided in **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 7)** [REP9-007] and **Project Level Kittiwake Artificial Nesting Structure (ANS) Site Selection Report (Revision 2)** [REP8-035].

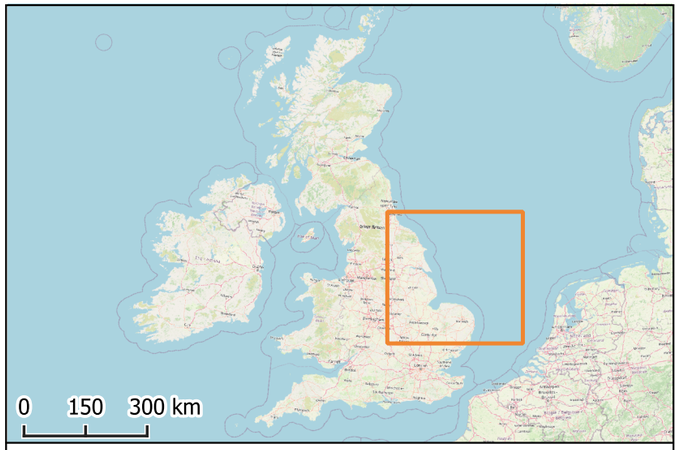
35. As a result of project led site selection work a preferred site has been identified which has been progressed in a Marine Licence application (within candidate site 6a). The Marine Licence area is considered to present the lowest risks in terms of consenting, kittiwake collisions potentially related to offshore wind projects, shipping and navigation, health and safety (distance to safe harbour) and accessibility for monitoring and maintenance. Lower risks at the Marine Licence area 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 proposed Outer Dowsing ANS, dependent on the final location of the ANS within the Marine Licence area. The location of the Marine Licence area is presented in **Figure 4-1** Location of ANS Candidate Sites to be Progressed for Site Investigation Surveys

36. .

37. The Marine Licence area was defined following a process to identify discrete areas within the preferred AoS (6a) characterised by low shipping and navigation risk, and suitable ground conditions. This smaller area was then subjected to further interrogation to assess suitability from a health and safety, operations and maintenance, and engineering perspective. The Applicants engaged with key stakeholders including Natural England and the RSPB on their approach to site selection, and on the shortlisted candidate sites through the expert topic group (ETG) process. Additional consultation with stakeholders to date has included engagement with Trinity House, the Maritime and Coastguard Agency (MCA), Historic England and the National Federation of Fishermen's Association (NFFO).

38. The Applicants completed geophysical surveys for Marine Licence area in April and May 2025, followed by geotechnical surveys (cone penetrometer tests (CPT) and borehole analysis) in May and July 2025. The outputs of these surveys confirmed the presence of suitable ground conditions for an offshore ANS. In July 2025, a Marine Licence application was submitted to the MMO (MLA/2025/00344), which has now been verified and is in the consultation phase (commencing 2nd October for 28 days). Negotiations are currently ongoing with the Crown Estate regarding the Seabed lease, however they have provided an updated letter of comfort. Consultation with fisheries organisations and other key stakeholders remains ongoing.





Legend:

- Project Red Line Boundary
- Marine Licence Area
- Offshore Wind Site Agreements
- EEZ
- 12NM

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P04					
S2	P03					
S2	P02					
S2	P01	25/09/2025	Suitable for information	AN	EM	EP

Title:

Figure 4-1: Dogger Bank South Offshore ANS Marine Licence Application Area

Figure: 0019	Drawing No: PC2340-CEA-OF-ZZ-DR-Z-0033-OffshoreANSAoS-P01

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

Project:	Title:
Dogger Bank South Offshore Wind Farms	Dogger Bank South KCIMP

collaborative environmental advisers

RWE

4.2 Design of Offshore ANS

39. This section will identify the design and delivery for the Offshore ANS programme proposed to be provided, including any updates to the evidence base to demonstrate the confidence that the compensation measure will be able to deliver the required increase in target species productivity. The evidence base provided in support of this measures is set out in **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 7)** [REP9-007].

40. The **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 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.

41. 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. The latest stage of the ANS concept design was presented to the Kittiwake Steering Group on 9th October 2025 ahead of the appointment of an EPCI contractor by the Applicants. This ensured that the Kittiwake Steering Group had oversight of the design base case and an opportunity to influence the process ahead of design freeze.

42. 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.

43. 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[2] 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
- The potential use of partitions should be provided between each discreet nesting site.

44. As demonstrated in **KSCP** [APP-053], members of the Kittiwake Steering Group agreed that the design principles outlined above and in table 10.1 of the **KSCP** [APP-053] are ecologically suitable and appropriate to inform the design of Round 4 offshore ANS. Several additional principles were also recommended for the final design to facilitate monitoring of the ANS post-installation that have been adopted by the Applicants. These include:

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

45. At the time of writing, the concept design phase for the offshore ANS is underway, with a preferred design having been identified. The design base case has been presented to the Kittiwake Steering Group on two occasions (4th April & 9th October 2025) and is currently subject to refinements based upon the outcomes of this engagement. Potential deviations from ecological design specifications outlined in the **KSCP** [APP-053] have been discussed with the Kittiwake Steering Group. A brief summary of ecological design features discussed with the Kittiwake Steering Group on 4th April and the position of respective Parties is provided in **Table 4-1**.

[2] Following a review of topside concept designs and engagement with the Kittiwake Steering Group on 4th April 2025, it was agreed that roof pitch in excess of 20 degrees would be agreeable and would not be likely to prohibit ecological viability of the ANS for kittiwake. See **Table 4-1** for details.

Table 4-1 Ecological Design Features Discussed with the Kittiwake Steering Group 4th April 2025.

Ecological Feature / Design Consideration	Applicants Position	Steering Group Position
Roof – Overhang / roof to help protect against weather conditions and additional predator deterrent. Roof pitch in excess of 25 degrees can be used to deter nesting.	Roof pitch at 25 degrees makes access and maintenance challenging from a HSE perspective. The Applicants propose that the maximum ramp pitch should be 20 degrees. Any pitch exceeding this would require additional flat working surfaces such as stairs to reach panels on pitched roof- this should be avoided to deter predators.	It was agreed by the Kittiwake Steering Group that a 20-degree pitch was likely to be acceptable. A 2m overhang on the roof was also considered as highly preferable.
Ledge overhang – Vertical wall designed to create nesting ledge overhangs sufficient to minimise lower ledge fouling by droppings and potential for reducing avian predation risk.	While an overhang would be preferred to protect birds on lower ledges, a vertical overhang would be extremely challenging to incorporate into final topside design. .	An overhang is preferable if possible. But the Kittiwake Steering Group recognise that it is not possible to replicate the complexity of natural environments on artificial structures offshore.
Partitioning - Walls/partitions between groups of nests. To facilitate an experimental design, each structure should have alternating rows with and without compartments. The order of alternation should be different on adjacent faces. Design should allow for easy addition / removal of partitions.	Due to HSE challenges associated with undertaking work at sea and increased costs for removable partitions, the Applicants propose a mixture of permanently open and partitioned nesting spaces. The design will provide a mixture of fixed partitioned and non-partitioned spaces.	Fixing the partitions it increases the risk of not being able to change the structure if the productivity of the measure is not met. However, variability in spaces across the structure is key to success. Kittiwakes are sociable and often choose to breed in proximity to other pairs, so this may not be an impediment.

Ecological Feature / Design Consideration	Applicants Position	Steering Group Position
Monitoring Capability	It would be highly challenging, to incorporate remote camera coverage of all nesting spaces on the ANS topside. It will be necessary to have partial camera coverage. The majority of monitoring, especially in the pre-colonisation/early colonisation phase will be remote.	Productivity could be monitored from a representative sample, approximately 60% camera coverage of nesting spaces would be sufficient. If birds show preference for a particular face on the ANS, cameras could target this area. Accessibility to 40% of the ledge spaces for bird ringing was also agreed.

46. Formal feedback from the Kittiwake Steering Group from the meeting on the 9th October 2025 has not yet been received by the Applicants, however verbally the feedback was generally positive regarding the design updated presented by the Applicants, with no major objections raised. In summary, information was provided by the Applicants on the concept design shape, orientation, space utilisation, arrangement of external deck space, and structure lighting and marking. The Kittiwake Steering Group also verbally welcomed the design updates which the Applicants had incorporate based on previous feedback (4th April 2025 meeting), particularly in relation to the inclusion of a roof overhang, back wall overhang, and design arrangements to facilitate monitoring requirements.

47. The detailed design phase for the foundation and topside structures is due to commence in Q1 2026 following appointment of the EPCI contractor to ensure that the structure as built will be suitably designed to account for seabed conditions at the relevant location.

48. The design envelope for the ANS is summarised below in **Table 4-2**. The proposed monopile will be up to 5m in diameter and will be installed to a depth of approximately 25m below the seabed. Based on the monopile diameter, the direct spatial footprint of the monopile foundation is 19.64m^2. Scour protection may be required, increasing the seabed footprint to a maximum of 490.9m^2 (based on 25m diameter scour protection). If a piled jacket foundation is used this would increase the seabed footprint to 4,356m^2 (based on a 46m leg width and 20m scour protection).

49. The total height of the ANS structure from Lowest Astronomical Tide (LAT) is expected to be a maximum of 62m.

50. Dimensions of the topside structure are dependent on the number of nesting spaces required by the Secretary of State when a consenting decision is reached. As this will not be confirmed until January 2026 at the soonest, maximum dimensions have been included as a worst-case scenario in alignment with the Marine Licence application. A range of design options have been considered to accommodate different numbers of nesting spaces.

51. The topside structure will be a maximum of 35m wide with a square plan arrangement (see **Figure 4-2**) however, the structure is likely to be 18m wide based on current design options. A maximum topside height of 62m has been included for the purpose of the Marine Licence application however, the topside is likely to be 37m high based on current design options. Nesting ledges will be included on all faces of the topside structure, allowing access for individual nesting and partitioning. A davit crane will also be positioned on the corner of the external platform, to provide access for larger foreseeable equipment (i.e. battery units or solar panels).

Table 4-2 Design envelope for offshore ANS

Parameter	Maximum Design Scenario
Monopile diameter (m)	5
Monopile embedment depth below seabed level (m)	25
Monopile seabed spatial footprint (m^2)	19.64
Monopile total seabed spatial footprint including scour protection (m^2)	490.9
Pile jacket total seabed spatial footprint including scour protection (m^2)	4,356
Topside structure length (m)	35
Topside structure width (m)	35
Topside structure height (not including pile) (m)	42

Parameter	Maximum Design Scenario
Total structure height above LAT (including 42 m for the topside structure and 20 m for the pile out of the water) (m)	62

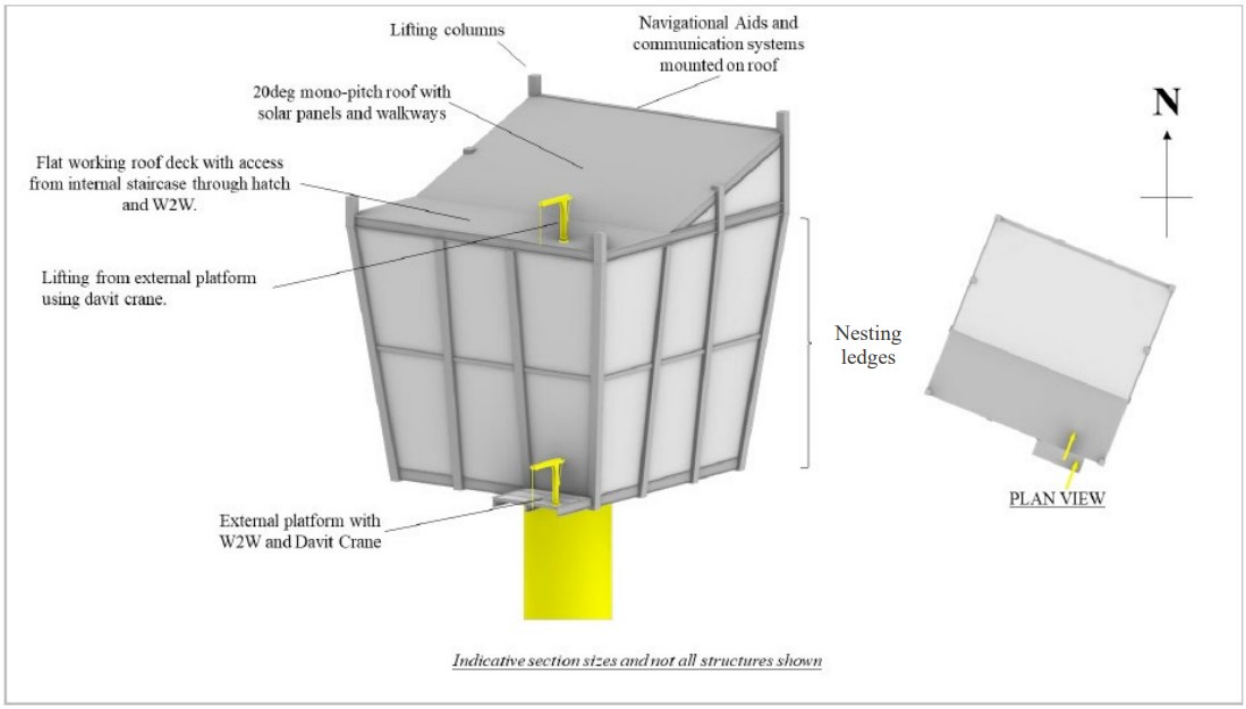


Figure 4-2 Indicative concept design for offshore ANS

52. It is anticipated that the ANS will be fabricated off-site, transported in parts to the nominated port whereupon they will be part assembled prior to load out. For site installation, a jack-up vessel would be used to install the monopile and topside ANS. It is expected that the foundations will be installed by hammer and driven into the seabed.

53. Scour protection around the foundation may be in the form of a rock blanket design. Designs have been produced for both single and double-layer systems based on a rock density of 2,650kg/m^2 which should be targeted to protect against flow disturbances at the base of the pile. For the monopile, scour protection up to 25m diameter may be required and if a piled jacket is used, scour protection of up to 20m diameter may be required around each leg.

4.3 Delivery Mechanism

54. This section will confirm the nature and status of all consents, access agreements, as well as any other relevant approvals and / or funding arrangements that are necessary to secure the implementation of the compensation measure and include a programme for delivery of any outstanding consents.

    This section will also outline key members involved in the delivery, their role in the process and responsibilities associated with implementation.

55. 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.

56. 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. This enables both the Applicants and ODOW to deliver the strategic measure and approach in line with the **KSCP** [APP-053], collaboratively through the installation of individual project-led ANS. This approach aligns with DESNZ guidance (DESNZ, 2025) which states "*Where possible, applicants should work collaboratively to ensure that larger and fewer offshore ANSs are placed in optimal sites*".

57. The MoU between the Applicants and ODOW has not been disclosed due to the commercially sensitive nature of the collaborative agreement. However, the Applicants have submitted a Letter of Intent as part of their DCO application document package and have provided details of consultation with other developers in **Appendix 1 - Project Level Kittiwake Compensation Plan** [APP-052] to demonstrate the positive direction of travel with respect to collaborative discussions between the Applicants and ODOW (see **Collaborative Delivery of Kittiwake Compensation: Letter of Intent** [APP-055]).

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

59. A marine licence application will be submitted to the MMO to ensure that the appropriate consent is in place prior to the project led ANS installation. The application documents will include all relevant environmental assessments (e.g. MCZ Assessment, Marine Plan Assessment, Underwater Noise Assessment and Marine Archaeology Assessment as appropriate).

60. 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 shortlisted ANS AoS progressed by the Applicants.

61. An alternative option for the collaborative delivery of compensation and / or adaptive management 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 offshore wind 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.

4.4 Maintenance, Monitoring and Adaptive Management

62. This section identifies the monitoring and adaptive management principles and processes that have been developed by the Applicants with engagement from the Kittiwake Steering Group. It will continue to be developed in line with the evidence base that has been provided in support of the **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 4)** [REP2-010]. Following approval and implementation of the Kittiwake CIMP, the KCSG will be engaged in relation to implementing adaptive management if required as outlined in the Consultation section above. Specific topics of discussion for consideration of the KCSG, and therefore the purpose of the group, will be regarding project / study design, monitoring, adaptive management options and associated triggers. The focus of the KCSG will be specifically to deliver the compensation for DBS East and DBS West and topics beyond this will be out of scope for the Kittiwake CIMP.

4.4.1 Routine Maintenance

63. It is important that the offshore ANS is maintained properly so that it can function as intended and provide a safe and effective nesting structure for breeding kittiwake. Furthermore, the ANS must satisfy all obligations in relation to health, safety and the environment (HSE) and fulfil regulatory requirements such as those for navigational risk management. To ensure this, there will be regular inspections by qualified engineers and ornithologists to ensure the needs of the kittiwake are met and that the ANS is functioning as required, and safe for those requiring access to the structure for maintenance and monitoring purposes.

64. Regular maintenance will be undertaken for the duration of the lifespan of the offshore ANS. Such a programme will include structural inspections, visual inspections, certifications of the structure and electrical systems and cleaning. Cleaning of the structure will be key to ensuring that the camera system remains functional and that the Applicants can continue to undertake monitoring during the breeding season. It is anticipated that to minimise risk of kittiwake disturbance, maintenance activities will be restricted to outside of the breeding season, i.e. October to February. The only exception to this would be circumstances where emergency works are required to avoid serious risk to navigation or compensation delivery e.g. failure of navigational lights, or damage to the ANS which if unaddressed may have the potential to threaten nests.

65. Any work undertaken outside of the scheduled maintenance will be communicated to the KCSG and summarised in the annual report.

66. Routine maintenance activities to be undertaken are likely to include the following:

- Testing of components / electrical equipment including cameras, lights and any transmitters to reduce risk of faults and to ensure equipment remains operational.
- Replacement of solar panels, batteries used to power lights / cameras.
- Visual inspection of nesting spaces and structure to ensure functionality and integrity.
- Re-painting of structure to adhere with marking requirements.
- Removal of guano where required – e.g. if preventing camera field of view.

- Marine growth removal – e.g. should algal growth becomes established at access points.
- Biosecurity improvement works – e.g. disinfection of nesting spaces ahead of the breeding season following the identification of highly pathogenic avian influenza (HPAI) the previous season.

67. Additional works required outside of routine maintenance may include those related to adaptive management such as modification of the ANS to deter predators or encourage colonisation / productivity, or to aid monitoring e.g. reconfiguration of cameras to be located in more optimal locations.

68. All necessary consents and approvals will be secured ahead of any maintenance activities such as painting, removal or guano and / or marine growth and structure repairs.

69. An indicative programme of routine maintenance activities will be provided in due course, as the operations and maintenance schedule is developed.

4.4.2 Monitoring

70. 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 ANS 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.

71. Monitoring of the offshore ANS would commence the first breeding season following installation and would continue post-construction and at least until the success of the compensation has been demonstrated. This will cover the duration of the operational phase for the Projects and potentially beyond.

72. The **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. apparently occupied nests (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).
- Monitoring of natal dispersal via ringing of chicks (if possible).

73. At this stage, the Applicants' proposal for monitoring, maintenance and adaptive management is developed in accordance with the **KSCP** [APP-053], in consultation with the Kittiwake Steering Group and with reference to the COWSC draft Implementation and Monitoring Plan (IMP). Details on the monitoring programme will be developed further once the location and design of the offshore ANS has been finalised and the KCSG is formed.

74. The Applicants plan to primarily monitor the offshore ANS using remote camera techniques. This will be supplemented by annual in-person surveys where appropriate. Monitoring remotely using cameras would provide numerous benefits including:

- Significantly reduced HSE risk for visiting personnel.
- The ability to collect reliable data.
- The ability to undertake quality control on data obtained through footage review.
- An ability to witness differences in behaviour across the structure throughout the breeding season.
- The ability to witness predator and other species interactions (if present) which may have been otherwise missed during in-person visits.

75. Remote monitoring would also allow the Applicants to collect data for metrics beyond productivity, such as pre-colonisation indictors. These may include roosting and nest site prospecting behaviours which in the early years following installation will be important to understand and define so that early successes can be identified. Following a review of data, where possible, pre-colonisation indicators will be defined by the Applicants through engagement with the KCSG and Kittiwake Steering Group (as required). The collection of such information and development of such definitions will aid in better understanding of colonising behaviours of kittiwake on offshore structures, which at present is poorly documented. The definition of 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.

76. It is proposed that solar panels on the ANS will be used to power the camera system. A number of systems for ensuring sufficient power supply are under consideration at present. These include motion-activated, and / or timed cameras which would operate at dawn and dusk in the breeding season, (March to September) when kittiwake would be most active on the structure. Camera system specifications, locations and coverage will all be subject to the outcomes of onshore trials, the detailed design phase for the topside structure and further consultation with the Kittiwake Steering Group members.

77. Trials at the Applicants' onshore ANS in Gateshead are being used to test and define the most suitable monitoring techniques to employ on the offshore ANS. The use of this onshore ANS as a test bench reduces risk of sub-optimal data collection and transmission following implementation of the offshore ANS by conducting trials in a safe, predictable working environment ahead of deployment in a more challenging offshore setting. Work being undertaken by the Applicants includes (but is not limited to) developing an understanding of:

- Assessment of camera positioning and operational data collection timing (i.e. collection of optimal data across ANS over the breeding season).
- The energy requirements for efficient data collection methods.
- The reliability and effectiveness of various camera systems (e.g. visual vs. thermal).
- Transmission volumes associated with various data collection methods.
- Development of machine learning techniques for behavioural analysis of data collected by camera.
- Optimal partition spacing for kittiwake.
- Evaluation of optimal positioning decoys kittiwakes and nests.

78. In addition to remote camera monitoring, the ANS will also be subject to an in-person survey annually in June / July if remote monitoring data suggests that this will be of value. It is likely that pre-colonisation surveys will largely collect qualitative and semi-quantitative data, while post-colonisation surveys will focus on the collection of quantitative data. Data collected in the pre-colonisation phase will focus mainly on observing interactions between kittiwake and the ANS, the presence of any predators, pre-colonisation indicators and performance of the ecological features of the ANS. In-person surveys in the pre-colonisation phase will be subject to review of remote monitoring data and engagement with the KCSG.

79. In person post-colonisation surveys will be undertaken when chicks are in the pre-fledgling stage so that an assessment of productivity can be made. When there is evidence of colonisation, and remote data indicates the presence of young chicks, colour ringing of chicks will also be undertaken if a safe method of work can be achieved to demonstrate connectivity. Where possible, all in-person survey techniques will be undertaken in line with JNCC's Seabird Monitoring Handbook where possible (Walsh, *et al.*, 1995).

80. If required, a drone survey will also be undertaken annually when the in-person survey is implemented to aid in data collection and counts of AON. Any drone surveys undertaken will be carried out in accordance with best practice guidance (Edney, *et al.*, 2023).

81. The collection of monitoring data will enable an assessment on the success of the ANS delivery, colony establishment and performance, as well as connectivity (assuming a successful ringing programme). The success criteria will be considered in further detail in the Projects' post-DCO consent stage.

82. An indicative timetable for the annual monitoring programme is provided in due course as the monitoring schedule is developed.

4.4.3 Adaptive Management

83. The need for adaptive management will be considered following the appraisal of annually collected monitoring data once the Projects are operational. Adaptive management measures will aim to specifically address any issues understood to be impeding the successful delivery of compensation for the Projects. There may be an element of expert judgement when determining whether adaptive management is needed, scale, and how to implement it. As such, when related to ecological matters, adaptive management will be discussed with the Kittiwake Steering Group and / or KCSG (as appropriate) following the identification for potential need.

84. Adaptive management measures that may be considered will include (but will not be limited to):

- Rearranging of decoys (varied use / placement)
- Use of kittiwake call back audio
- Changes to the structure to add or move nesting spaces
- Alterations to nesting space modules and / or dimensions
- Alterations to the structure to address any predator related issues

- Nesting spaces apportioned to the Applicants on their onshore ANS at Gateshead.
- Increased monitoring and maintenance of ANS beyond that of the operational lifespan of the Projects.
- Contribution to the MRF should a strategic measure for kittiwake become available within a suitable timeframe for the Projects.

85. To provide resilience, the Applicants have signed an MoU with ODOW to secure apportioned nesting spaces on their project led offshore ANS. 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

86. In addition to various modifications of the offshore ANS, the Applicants onshore ANS may also provide a portion of the required compensation quantum should the full requirement not be provided by the Applicants' offshore ANS. Should the onshore ANS be particularly successful, a portion of the Applicants compensation requirement may be delivered by this structure. The onshore ANS also has the capacity to prevent the accrual of any mortality debt ahead of implementation of the offshore ANS and will have been in place a minimum of seven kittiwake breeding seasons ahead of earliest operation for the Projects.

87. Should there be an excess of kittiwake mortality debt at the end of the operational lifespan for the Projects (30 years), the Applicants will consider extending their monitoring and maintenance commitments for the offshore ANS to a later date until compensation requirements are delivered as adaptive management. 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. The elongated commitment to monitoring and maintenance of the ANS provides confidence that mortality debt can be offset should time be considered a limiting factor to delivering compensation.

88. Further details on the process for determining potential trigger points for adaptive management are provided in the **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 / or KCSG) and presented within the KSIMP.

4.5 Reporting

89. The **Draft DCO (Revision 12)** [REP9-003] outlines the reporting requirements for the Applicants in relation to the delivery of compensation via ANS.

90. An annual report will be produced by the Applicants detailing the effectiveness of the offshore ANS. This will comment on survey methods, success criteria, any requirement or consideration of adaptive management. This report will be submitted to the SoS following the annual analysis of data collected throughout the breeding season. Any barriers to success will be identified, and any requirement for adaptive management and details regarding consultation with the Kittiwake Steering Group (and / or KCSG) will be outlined.

4.6 Programme for Implementation and Delivery

91. An outline implementation roadmap for the delivery of the project-led offshore ANS is provided in **Table 4-3.** 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. Further details on the steps the Applicants will take to deliver the project led offshore ANS are detailed in the **Appendix 1 - Project Level Kittiwake Compensation Plan [**REP2-010].

92. An indicative programme for ANS delivery with ODOW is presented in **Table 4-4**. The dates provided are provisional (ODOW, 2025)and are presented within the context of the project being operational in 2030.

Table 4-3: 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.						

Timing	Indicative date	Activity / milestone	2024	2025	2026	2027	2028	2029
Pre-consent	2025 (Q1 – Q3)	Secure necessary licences, consents, and seabed lease.						
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 4-4: Outer Dowsing Offshore Wind Project Indicative Offshore ANS Programme (ODOW, 2025).

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

4.7 Discharge of Consent Condition

93. This section when populated will confirm how, based on the content of this report, the Secretary of State can discharge the condition relating to the delivery of the compensation required for the kittiwake feature of the FFC SPA.

5 Collaborative and Strategic Compensation

94. When fully populated, this section will, as secured by Schedule 18 of the **Draft DCO (Revision 12)** [REP9-003], confirm the nature of the collaborative compensatory measure to be delivered with ODOW in addition to the Applicants 'proposed project led measure / as an adaptive management measure.

95. The details of the MoU with ODOW are, at present, considered to be commercially sensitive, and as such cannot be shared. The Applicants will update this section with details regarding the collaborative agreement between both parties when they are able to do so.

96. In the event that a viable strategic compensation funding mechanism (such as the MRF) becomes available within the necessary timescales for the Projects, this section will, as secured by Schedule 18 of the **Draft DCO (Revision 12)** [REP9-003], confirm the nature of the contribution to be made to a Strategic Compensation Fund wholly or partly in place of the Applicants' proposed project-led measures or as an adaptive management measure.

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