



# Hornsea Project Four

## Volume B2, Annex 7.2: Compensation measures for FFC SPA: Kittiwake Offshore Artificial Nesting Roadmap

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## Revision Summary

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## Revision Change Log

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01	-	-	Submitted at Application
02	Amended throughout	Amended throughout	Removal of Gannet from the document for Deadline 1
02	6	1	Position on kittiwake AEol conclusion
02	Amended throughout	Amended throughout	Updates on implementation studies for Deadline 1
03	21 - 26	12	Updates to DCO wording
03	Amended throughout	Amended throughout	Changes to implementation and monitoring plan names
04	Amended throughout	Amended throughout	Updated reflecting progress for Deadline 5 submission
04	Amended throughout	Amended throughout	Updated regarding strategic compensation and Marine Recovery Fund.

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## Glossary

Term	Definition
Compensation / Compensatory Measures	If an Adverse Effect on the Integrity of a designated site is determined during the Secretary of State's Appropriate Assessment, compensatory measures for the impacted site (and relevant features) will be required. The term compensatory measures is not defined in the Habitats Regulations. Compensatory measures are however, considered to comprise those measures which are independent of the project, including any associated mitigation measures, and are intended to offset the negative effects of the plan or project so that the overall ecological coherence of the national site network is maintained.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
European site	A Special Area of Conservation (SAC) or candidate SAC (cSAC), a Special Protection Area (SPA) or a site listed as a Site of Community Importance (SCI). Potential SPAs (pSPAs), possible SACs (pSACs) and Ramsar sites are also afforded the same protection as European sites by the National Planning Policy Framework – para 176 (Ministry of Housing, Communities and Local Government, 2019). European offshore marine sites are also referred to as "European sites" for the purposes of this document.
Hornsea Project Four Offshore Wind Farm	The proposed Hornsea Project Four Offshore Wind Farm project. The term covers all elements of the project (i.e., both the offshore and onshore). Hornsea Four infrastructure will include offshore generating stations (wind turbines), electrical export cables to landfall, and connection to the electricity transmission network. Hereafter referred to as Hornsea Four.
National Site Network	The network of European Sites in the UK. Prior to the UK's exit from the EU and the coming into force of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 these sites formed part of the EU ecological network known as "Natura 2000".
Offshore Ornithology Engagement Group (OOEG)	The Hornsea Four Offshore Ornithology Engagement Group means the group that will assist, through consultation the undertaker in relation to the delivery of each compensation measures as identified in the kittiwake compensation plan, the gannet compensation plan and the guillemot and razorbill compensation plan. Matters to be consulted upon to be determined by the Applicant and will include site selection, project/study design, methodology for implementing the measure, monitoring, and adaptive management options as set out in the kittiwake compensation plan, the gannet compensation plan and the guillemot and razorbill compensation plan.
Orsted Hornsea Project Four Ltd.	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Ramsar	Wetlands of international importance designated under the Ramsar Convention.
Special Area of Conservation (SAC)	Strictly protected sites designated pursuant to Article 3 of the Habitats Directive (via the Habitats Regulations) for habitats listed on Annex I and species listed on Annex II of the directive.
Special Protection Area (SPA)	Strictly protected sites designated pursuant to Article 4 of the Birds Directive (via the Habitats Regulations) for species listed on Annex I of the Directive and for regularly occurring migratory species.

Term	Definition
Black-legged kittiwake biogeographic population	The east Atlantic breeding population of kittiwake which includes individuals from the Flamborough and Filey Coast SPA (Stroud <i>et al.</i> , 2016). Proposed compensation measures will be undertaken within this populations breeding and migratory range.

## Acronyms

Acronym	Definition
AEol	Adverse Effect on Integrity
BEIS	Business, Energy and Industrial Strategy
BRAG	Black, Red, Amber, Green.
CCUS	Carbon Capture, Utilisation and Storage
CfD	Contracts for Difference
DCO	Development Consent Order
DML	Deemed Marine License
FFC	Flamborough and Filey Coast
FID	Final Investment Decision
KCIMP	Kittiwake Compensation Implementation and Monitoring Plan
MMO	Marine Management Organisation
MoU	Memorandum of Understanding
NNSSR	North Norfolk Sandbanks and Saturn Reef
NSTA	North Sea Transition Authority
OEOG	Offshore Ornithology Engagement Group
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OREI	Offshore Renewable Energy Installations
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PINS	Planning Inspectorate
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SoS	Secretary of State
SPA	Special Protection Area
TRI	Transportation and Storage Regulated Investment
UK	United Kingdom

## 1. Introduction

- 1.1.1.1 This Kittiwake Offshore Artificial Nesting Roadmap document provides an overview of the anticipated next steps for implementation of a single offshore artificial nesting structure as a compensation measure for Hornsea Four, if deemed necessary by the Secretary of State (SoS) following their Appropriate Assessment. It should be noted that this document will be updated as necessary and should compensation be required, it will be added to or revised as the Development Consent Order (DCO) application for Hornsea Four progresses. This roadmap sets out a clear pathway to demonstrate that the compensation measure can be secured and that the mechanism for delivery of the compensation measure can be implemented.
- 1.1.1.2 Following the Applicant's DCO submission, the Applicant has revisited its conclusion of no potential for an adverse effect on integrity (AEol) in respect of the kittiwake feature of the Flamborough and Filey Coast Special Protection Area (FFC SPA) from Hornsea Four and concluded AEol on the FFC SPA in combination with other plans and projects. The Applicant maintains its position of no AEol alone or in combination for all other qualifying species (guillemot, razorbill and gannet) of the FFC SPA and for all other European sites.
- 1.1.1.3 In the DCO Application the Applicant's proposed without prejudice compensatory measures for gannet and kittiwake were presented together in a single [B2.7 Gannet and Kittiwake Compensation Plan \(APP-186\)](#). However, as set out in the Applicant's position paper ([G1.5 Kittiwake Adverse Effects on Integrity \(AEol\) Conclusion \(AS-023\)](#)), the Applicant is updating the Report to Inform Appropriate Assessment (RIAA) (Revision 3 of [B2.2 Report to Inform Appropriate Assessment Part 1](#) (to be submitted at Deadline 5) and [Part 4 \(REP1-012\)](#) and its derogation case ([B2.5 Without Prejudice Derogation Case \(REP1-014\)](#)) based on an overall conclusion that there is potential for an AEol on kittiwake at the FFC SPA from Hornsea Four in-combination with other projects (see [G1.5 Kittiwake Adverse Effects on Integrity \(AEol\) Conclusion \(AS-023\)](#)).
- 1.1.1.4 In light of the Applicant's updated position on kittiwake, it is considered appropriate to separate the compensatory measures for gannet ([G5.17 FFC SPA: Gannet Compensation Plan](#); to be submitted at Deadline 5) and kittiwake (Revision 2 of [B2.7 FFC SPA: Kittiwake Compensation Plan](#) (submitted at Deadline 5) into separate compensation plans (and consequently separate Implementation and Monitoring plans), reflecting that compensatory measures for kittiwake are now considered necessary, whereas for gannet the Applicant remains confident there would be no AEol alone or in combination and the compensatory measures for gannet remain "without prejudice" measures. This roadmap now focusses on kittiwake.

## 2. Description and Scope

- 2.1.1.1 The provision of a single offshore artificial nest site to increase the annual recruitment of black-legged kittiwake (kittiwake) into the biogeographic population is considered a viable compensation measure for a potential AEol at the FFC SPA. The Applicant is considering two options by which to achieve this: repurposing an existing oil and gas platform (referred to hereafter as a "repurposed structure") or construction of a new offshore nesting structure, with a preference for a repurposed artificial nesting structure. It is important to note that a single structure will be delivered as effective compensation.
- 2.1.1.2 Kittiwake have been observed readily utilising man-made structures (see nesting seabird surveys undertaken by the Applicant during 2021 APEM, 2021 and Niras, 2021 (and repeat surveys are being undertaken during summer 2022 which are continuing to record kittiwake

colonies in increasing numbers)) and therefore it is considered that the establishment of an artificial nest site(s) would provide a viable and effective compensation option. Successful establishment of breeding colonies at a site would produce young, which would become part of the wider biogeographic population of kittiwake, thereby maintaining the coherence of the network of SPAs designated for kittiwake. The Evidence Reports (**B2.7.1 Compensation measures for FFC SPA: Offshore Artificial Nesting: Ecological Evidence (APP-187)**, **B2.7.3 Compensation measures for FFC SPA: Onshore Artificial Nesting: Ecological Evidence (APP-189)**) set out the ecological evidence for the artificial nesting measures and supports likely successful compensation measures. In particular, **Appendix F** of **B2.7.1 Compensation measures for FFC SPA Offshore Artificial Nesting Ecological Evidence (APP-187)** indicates there is an ample supply of immature birds searching for nest sites and available recruits for appropriately sited artificial nesting platforms.

## 2.2 Strategic Compensation

- 2.2.1.1 The Policy paper 'British Energy Security Strategy'<sup>1</sup> (BESS) published by BEIS in April 2022 recognises the even greater need for rapid development of offshore wind farms committing to 'cut the process time by over half' and 'helping to speed up delivery timelines'. The Applicant refers to **G5.8 Ørsted's approach to strategic ecological compensation** (submitted at Deadline 5) which defines strategic compensation including its purpose and the mechanism for funding (the Marine Recovery Fund ("MRF") or equivalent fund). It is considered important that Hornsea Four is able to place reliance upon the delivery of strategic compensation, in addition to the evidence submitted to date for project specific compensation measures.
- 2.2.1.2 Further to this the law and guidance require that the Secretary of State has a rational basis for finding that he has discharged his duty to secure that necessary compensation measures can be delivered post-implementation of the development. The delivery of strategic compensation substantiates the likelihood of delivery of the compensation measure. For example, Hornsea Four will be able to take advantage of the ecological evidence obtained through the delivery of strategic pilots, alongside evolving plans for strategic monitoring (also committed to in the BESS). The ability to develop best practice for the delivery of measures would also be of benefit to those projects in the planning system. Outwith the MRF the Applicant continues to work closely with other developers currently in the planning system who have been tasked with delivering compensation measures to find opportunities for early collaboration. This could for example lead to the sharing of artificial nesting structures on or offshore. The Applicant is therefore open to early collaboration with other developers in the delivery of compensation measures and will, where appropriate, identify opportunities for co-location of measures. This could form an integral part in the discharge of the Applicants obligations but will always be subject to maintaining the projects timescales for delivery to ensure the overarching policy set out in the BESS is achieved.
- 2.2.1.3 The Applicant refers to the Marine Net Gain – Consultation on the principles of marine net gain dated 7 June 2022 (Defra, 2022), which includes reference to the newly announced Marine Recovery Fund (MRF). The Applicant originally committed at para. 3.1.1.7 of the **B2.6 Compensation Measures for FFC SPA Overview (APP-183)** to contribute to a fund (£100,000 per year for 5 years) to develop further research to support evidence gathering, such as the research led by the Offshore Wind Strategic Monitoring and Research Forum. This commitment is also detailed in the Applicant's **B2.10 Without Prejudice Derogation Funding Statement (APP-202)** and **B2.6.2 Appendix A Ørsted's Strategic Compensation Approach**

<sup>1</sup> <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

(APP-185)). The Applicant has updated their position and now considers the MRF or other equivalent fund to be an appropriate fund for the sums to be paid and has drafted specific wording to include in the DCO.

2.2.1.4 The Applicant has taken a further step by committing to pay an agreed sum into the MRF either in substitution for the delivery of one or more of the proposed compensation measures (such sum to be agreed in consultation with the Department for Environment Food and Rural Affairs (Defra) prior to approval of the relevant implementation plans). Alternatively, the contribution could be paid as an adaptive management measure.

2.2.1.5 The proposal to contribute to the MRF has been included as part of the proposed compensation plans upon which each of the implementation plans will be based. The Applicant has also included draft DCO wording confirming that the implementation plans must also include the purpose of the contribution (i.e. as an alternative to the delivery of a specific compensation measure or as an adaptive management measure) and the amount and timing of the contribution (see [Section 12](#)).

### 3. Compensation Levels

3.1.1.1 The potential collision mortality effect from Hornsea Four for the project alone is predicted to be 23 individuals. It is calculated that approximately 62 additional breeding pairs will be required to compensate for the potential effect (see Revision 3 of [B2.2: Report to Inform Appropriate Assessment](#) and Revision 2 of [B2.7 FFC SPA: Kittiwake Compensation Plan](#) (to be submitted at Deadline 5) for further details on the predicted effects and compensation suite).

3.1.1.2 An additional population of kittiwake could be accommodated on either a repurposed or new structure (however preference is for a repurposed structure due to the ecological evidence and stakeholder advice). A colony of over 750 pairs of kittiwake could easily be supported by an artificial nesting structure, based on an initial design (see [Section 7](#)), and therefore easily providing over the required breeding pairs (presented in [Table 2](#) of Revision 2 of [B2.6 Compensation measures for FFC SPA: Overview](#)) the Applicant therefore has a high degree of confidence of the feasibility of this compensation measure.

### 4. Next Steps

4.1.1.1 The Applicant is continuing to refine the design details for an offshore nesting structure following the selection of the offshore location for a new and a repurposed structure. The Kittiwake Compensation Plan (Revision 2 of [B2.7 FFC SPA: Kittiwake Compensation Plan](#) (submitted at Deadline 5)) and this Roadmap (Revision 4 of [B2.7.2: Compensation measures for FFC SPA: Kittiwake Offshore Artificial Nesting Roadmap](#) submitted at Deadline 5) included originally in the DCO Application will continue to be updated based on stakeholder feedback and evidence prior to the close of Examination (noting that a separate version has been produced for gannet alone ([G5.17: FFC SPA: Gannet Compensation Plan](#)) which will be submitted at Deadline 5). Stakeholder engagement following submission of the application and through-out the examination period will include:

- **Statutory Nature Conservation Bodies:** Continuing regular meetings with relevant statutory nature conservation bodies, including Natural England, for feedback and input on the site selection and design of a repurposed or new structure.
- **The Crown Estate:** The Applicant has and will continue to engage with The Crown Estate through the examination period regarding site selection for a new structure and to ensure that constraints are considered appropriately to mitigate any potential impacts of the new structure. The Applicant provided the two potential locations for a



new structure to The Crown Estate to undertake proximity checks ahead of undertaking additional ground surveys. The Applicant will also engage with The Crown Estate regarding a repurposed structure to discuss the proprietary rights required to access the repurposed structure upon relinquishment by the current oil and gas operator/owner of the production licence relating to the platform.

- **Oil and Gas Operators:** The Applicant has signed a memorandum of understanding (MoU) with Alpha Petroleum Resources Limited and Energean UK Limited with a view to the potential repurposing of the Wenlock Platform situated in the Wenlock Gas field located in the south North Sea 145km off the coast of Humberside. At this stage the Applicant is confident that this platform can be repurposed however should technical studies demonstrate otherwise the Applicant will continue to engage with oil and gas operators to explore options and feasibility for repurposing an alternative existing platform;
- **Oil and Gas Regulators:** The Applicant is engaging with the North Sea Transition Authority (NSTA) at a strategic level on the shaping of a framework for repurposing infrastructure which included a series of workshops during the Autumn of 2021 and bilateral discussions in 2022. The Applicant is confident that amendments to primary or secondary legislation *are not* required to facilitate the repurposing of an offshore structure. The Applicant will keep a close watching brief for the release of further information on repurposing in the context of carbon capture, utilisation and storage (CCUS) and hydrogen and any changes or updates to regulations and/or guidance that can be applied to the repurposing of a platform for offshore nesting. The Applicant has noted the latest developments particularly in the context of carbon capture and the updated Transportation and Storage Regulated Investment (TRI) model last updated in quarter 1 2022. The TRI model sets out a regulated framework which aims to provide visibility to investors. The model addresses the repurposing of existing infrastructure and the Applicant has taken the learnings from the repurposing of existing infrastructure for carbon capture and storage in their engagement with stakeholders. The Applicant has also shared a note with the relevant stakeholders setting out the proposed regulatory framework to reclassify the platform so that it can be refurbished, operated, maintained and decommissioned as if it were any other offshore installation owned by the Applicant.

## 5. Indicative timescale for delivery and implementation

5.1.1.1 The high-level programme presented below ([Table 1](#)) is applicable to the implementation and delivery of offshore artificial nesting compensation measures (repurposed and new). The timing of implementation of an artificial nesting structure is provisional as the timeframe for Examination, consent award, reaching final investment decision (FID) and Contracts for Difference Allocation Rounds Five and Six, have not yet been set. The programme has been carefully considered to ensure timely delivery of the compensation measure with the Applicant currently committed to the implementation of a single structure (repurposed or new) at least three kittiwake breeding seasons ahead of operation.

**Table 1: Indicative timescale for delivery and implementation.**

Activity	Year	2021	2022	2023	2024	2025	2026	2027	2028
Site Selection	2021 – 2022	█	█						
Conduct site geophysical surveys and geotechnical investigations	2022		█						
Design of topside	2022		█						
Design of foundation	2022		█						
Offshore nesting consent and licencing	2022		█						
Fabrication of topside	2022 – 2023		█	█					
Fabrication of foundation	2022 – 2023		█	█					
Anticipated Hornsea Four DCO Granted	2023			█					
Transport, Installation & Commissioning	2023			█					
Compensation Implementation <sup>2</sup>	2023/ 2024 - TBC			█	█				
Onshore Construction	2024				█				
Establishment of Offshore Ornithology Engagement Group (OOEG)	Following consent award			█	█	█	█	█	
Kittiwake Compensation Implementation and Monitoring Plan (KCIMP)	Following consent award			█	█	█	█	█	
KCIMP submitted to Secretary of State	Following consent award			█	█	█	█	█	
Offshore Construction of Hornsea Four Foundations	2026						█		
Offshore Construction of Hornsea Four Offshore Turbines	2027							█	
First Power (partially operational windfarm)	2028								█

<sup>2</sup> Due to the uncertainty regarding Allocation Round 5 and Allocation Round 6 of the Contracts for Difference (CfD) scheme the date cannot be confirmed at this time.

- 5.1.1.2 The Policy paper 'British Energy Security Strategy' published by BEIS in April 2022<sup>3</sup> recognises the even greater need for rapid development of offshore wind farms committing to 'cut the process time by over half' and 'helping to speed up delivery timelines'.
- 5.1.1.3 The Applicant recognises how vital it is that the compensation delivered is not only successful for Hornsea Four, but for the industry and that the progress will be watched closely. The Applicant retains its commitment to implement an artificial nesting structure three breeding seasons ahead of operation of the windfarm, as it has been argued that this balances the need to demonstrate the compensation measure will be effective with the pressing and urgent need to deliver 50GW of offshore wind energy by 2030, as set out in the British Energy Security Strategy. The Applicant does however believe that there is now a strong case to be made not to include a specific timescale in the DCO ahead of operation, but rather to simply state that the artificial nesting structures should be in place prior to operation. This approach would remove this issue as an impediment to the faster deployment of offshore wind energy.
- 5.1.1.4 The Applicant will continue to seek opportunities to accelerate the construction of the artificial nesting structure. It is noted that in February 2022, the UK Department of Business, Energy & Industrial Strategy (BEIS) committed to annual CfD auctions from March 2023 and Auction Round 5. Previously, CfD auctions 1 to 4 had been held on an approximate 2-year cycle. Coupled with the new 50GW target, this demonstrates the clear priority to deliver significant capacity of offshore wind by 2030.
- 5.1.1.5 The Wind Farm is expected to operate for 35 years following construction. The accepted compensation measure(s) would be monitored throughout the operational lifespan of the Wind Farm.

## 6. Consultation

- 6.1.1.1 Post-consent, a steering group named the Offshore Ornithology Engagement Group (OOEG) would be convened by the Applicant to consult on the implementation, reporting and any necessary adaptive management of the structure as determined by the Applicant. The OOEG will aim to incorporate relevant stakeholders and ultimately inform the Kittiwake Compensation Implementation and Monitoring Plan (KCIMP).
- 6.1.1.2 The KCIMP will be initiated (following the content in the outline Kittiwake Compensation Implementation and Monitoring Plan (KCIMP) (Revision 2 of **B2.7.6 Outline Kittiwake Compensation Implementation and Monitoring Plan**) submitted at Deadline 5) noting that separate versions have been produced for gannet alone (**Outline Gannet Compensation Implementation and Monitoring Plan: Bycatch** and **Outline Gannet Compensation Implementation and Monitoring Plan: Artificial Nesting Structure**) which will be submitted at Deadline 5, as a result of the removal of gannet from certain kittiwake documents. The KCIMP will document all of the proposed compensation measures for kittiwake (including mechanisms and programme for delivery, monitoring, adaptive management and reporting). The OOEG will be consulted during development of the KCIMP. The KCIMP will be submitted to the Secretary of State for approval following consent award.
- 6.1.1.3 The Applicant will identify and design a practical, high-quality nesting structure to support the required number of nesting birds. This would be discussed with the OOEG.
- 6.1.1.4 Following design and location decisions, the project will move into the implementation phase. This will involve extensive consultation with stakeholders via the OOEG process to

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<sup>3</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1069969/british-energy-security-strategy-web-accessible.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1069969/british-energy-security-strategy-web-accessible.pdf)

ensure cooperation across the monitoring aspects of the compensation measure. The proposed implementation process of the measure will be documented in the KCIMP and will be submitted to the Secretary of State (and other appropriate stakeholders) for approval.

- 6.1.1.5 The success of the compensation measures (see [Section 3.2](#) of Revision 2 of [B2.7 FFC SPA: Kittiwake Compensation Plan](#) submitted at Deadline 5) will be monitored to report on how the measure is delivering as agreed via the KCIMP. The details of the monitoring phase of the compensation measure will be discussed with the OOEG and will be set out within the KCIMP for approval by the Secretary of State (and other relevant stakeholders, as necessary).
- 6.1.1.6 Monitoring will inform any adaptive management of the compensation measure, if required. The Applicant will focus on maximising effectiveness through good initial design and appropriate maintenance. This will be continued until Hornsea Four has ceased operating and therefore no further collision mortality or a determination is made by the Secretary of State following consultation with the relevant statutory nature conservation body, that compensation is no longer required.
- 6.1.1.7 Reporting of the results of implementation of the compensation measure will be carried out according to timescales discussed with the OOEG and set out in the KCIMP. It is expected that annual reporting will be undertaken to monitor breeding success.

## 7. Design Considerations

- 7.1.1.1 Further design and engineering assessment works are being undertaken by the Applicant following identification of an area of search and refinement of the exact location and technical design criteria for any repurposed structure. However, for the purpose of the Application, the following is assumed based on relevant experience.

### 7.2 Repurposing Existing Offshore Platforms

- 7.2.1.1 The Applicant's preferred option is to utilise an existing offshore platform (potentially an existing oil and gas structure or similar), and use the foundation to:

- A. Design, construct and install a new topside once the existing topside structure has been removed and decommissioned; and
- B. Repurpose the existing topside structure by adding additional nesting.

- 7.2.1.2 For example, a platform currently under design consideration consists of a topside platform of 16 meters x 12.75 meters area sitting atop a 47 meters high jacket foundation in 25 m water depth. Indicative design parameters are provided in [A4.6.1 Volume A4 Annex 6.1 Compensation Project Description \(APP-057\)](#).

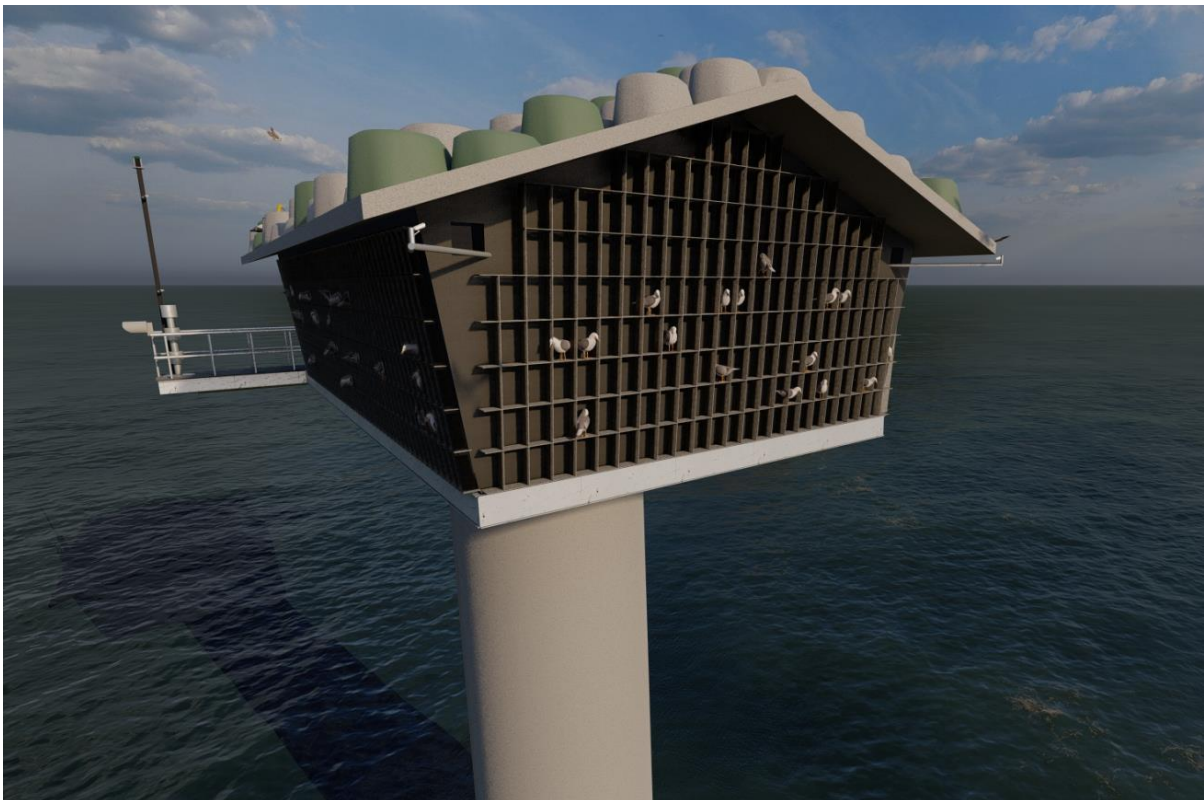
### 7.3 New Offshore Platforms

- 7.3.1.1 The Applicant is refining the design of a new foundation and topside for the specific purpose of supporting kittiwake nesting. The maximum design parameters for a new offshore nesting foundation and platform are presented in [A4.6.1 Volume A4 Annex 6.1 Compensation Project Description \(APP-057\)](#).

### 7.4 Topside designs

- 7.4.1.1 Initial design work for topsides has been undertaken and an early-stage topside design for either a repurposed or new structure. The design features of the topside and the rationale

for these is detailed in [B2.7.5 Compensation measures for FFC SPA: Artificial Nesting: Site Selection and Design \(APP-191\)](#). Following the Application submission, the Applicant has further refined the design of the topside and although not yet finalized for detailed design, [Figure 1](#) shows the design progress to date to provide an indication of the provisions for kittiwake. This shows the kittiwake nesting provisions on the side walls of the topside. The design shown consists of a topside with an area of 11 meters x 7.4 meters and a height of 11 meters. In summary, this refined design provides space on nesting ledges for approximately 750 nests with a vertical back wall and 30 cm length of shelf allowed for each nest. A vertical dividing wall would be installed between each 30 cm length to provide shelter from the wind and to prevent predators from walking along the ledges. Ledges are designed to be 20 cm wide with 50 cm vertical gap between ledges. An overhanging roof would be provided at the top of the nesting structure to provide shelter and to deter predators.



**Figure 1: Potential topside design.**

7.4.1.2 Following this initial design work, the Applicant has commissioned the detailed engineering design for the artificial nesting structure.

## **8. Site Selection**

8.1.1.1 The Applicant is currently progressing through a detailed site selection process to identify an offshore location in UK waters where an artificial structure which provides additional breeding opportunities to kittiwake can be established. This may be a new location or a re-purposed structure. This will be determined by the on-going site identification process outlined within the Evidence Report ([B2.7.3 Compensation measures for FFC SPA: Offshore](#)

**Artificial Nesting: Site Selection and Design (APP-187)**) where an initial search area within which the structure will be located is presented.

- 8.1.1.2 The site selection process for the offshore artificial nesting structure was undertaken via a heatmapping exercise. Ecological criteria are a primary consideration, with technical and commercial parameters also considered in the site selection analysis. The heatmap has been applied using 5 km search grids, across the entire search area (detailed in **A4.6.1 Volume A4 Annex 6.1 Compensation Project Description (APP-057)**), each with unique identifying codes. 5 km search grids are used as it is considered that they are large enough to provide the flexibility required for ground conditions to ensure the structure can be suitably micro-sited.
- 8.1.1.3 In relation to a repurposed structure (which is the Applicant's preferred method of providing artificial nesting as compensation), highly feasible options have been identified with existing kittiwake colonies following initial surveys undertaken in 2021, where there is scope to provide additional nesting, and in suitable locations. Further surveys are being undertaken during summer 2022 and kittiwake colonies continue to be recorded and in addition, breeding razorbill and guillemot have also been found during the initial surveys in June 2022 (see **Figure 2**).



**Figure 2 Photographs of breeding kittiwake (left) and breeding razorbill (right) on a platform within the Area of Highest Ecological Potential.**

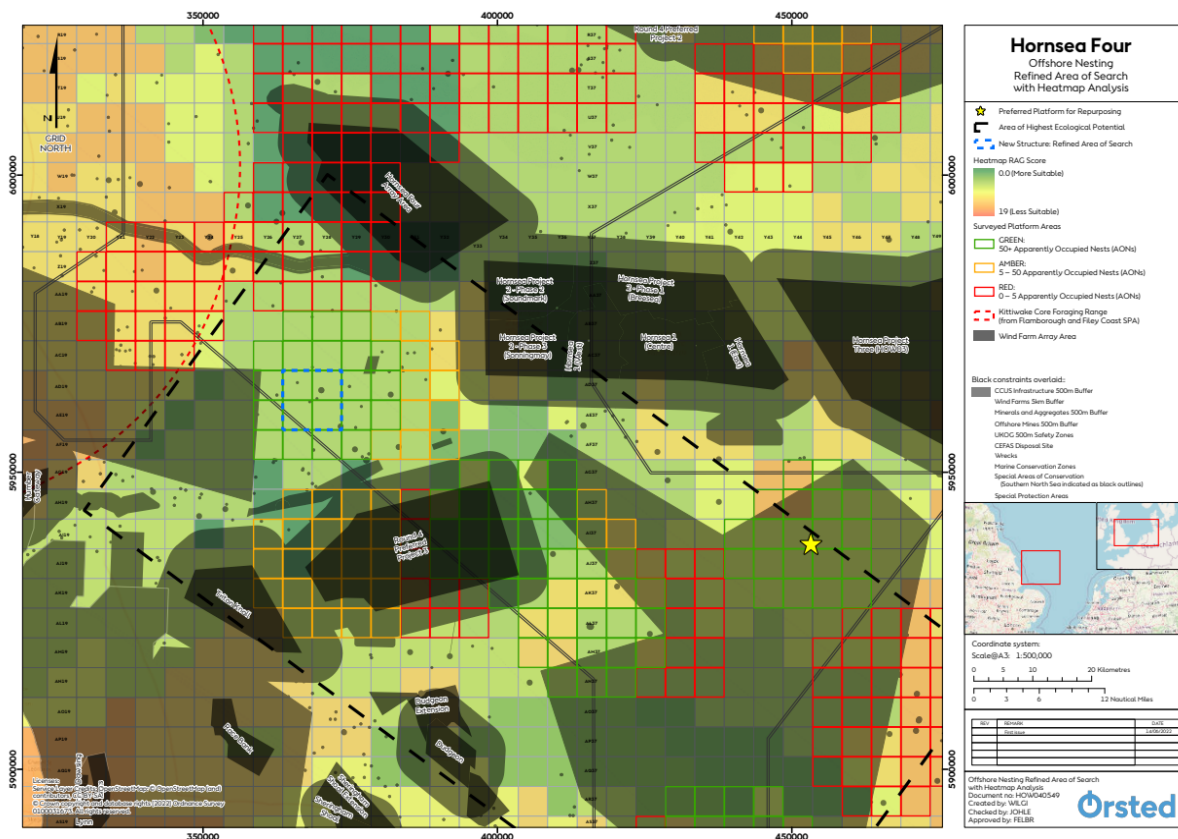
- 8.1.1.4 Consideration has also been given to suitable timeframes for decommissioning and penchant by platform owners or operators to collaborate in repurposing. Hornsea Four is currently progressing discussions with owners and operators of suitable platforms within the Area of Highest Ecological Potential (see **B2.7.3 Compensation measures for FFC SPA: Offshore Artificial Nesting: Site Selection and Design (APP-191)** for further details on the identification of this area). An independent engineering consultancy is reviewing the relevant platform documentation to confirm the viability of the options for repurposing from a technical and structural perspective. As a result, a preferred option for repurposing has been identified and an MOU has been secured with the owner (Energean UK Limited) and operator (Alpha Petroleum Resources Limited) to allow the Wenlock Platform to be discussed and shared with stakeholders. The location of this platform is shown in **Figure 3** below and it already has an established kittiwake colony (around 69 apparently occupied nests (AONs) at latest count and increasing in number from the 2021 survey). The Applicant

is undertaking further survey work on nesting seabirds for the preferred repurposing option in the summer of 2022 following the same methods which Natural England have praised.

- 8.1.1.5 The topside design for a repurposed structure will be developed specifically to the Wenlock Platform to ensure as many ecological elements as possible of the existing platform can remain in situ and be repurposed where appropriate (subject to the structural inspection and ensuring the structure is hydrocarbon free). Hornsea Four is also progressing discussions with regulatory bodies regarding the regulatory mechanism by which to reclassify the oil and gas platform so that it can be refurbished, operated, maintained and decommissioned as if it was any other installation owned by the Applicant.
- 8.1.1.6 In relation to a new structure, statutory stakeholders have advised that site selection should avoid the core foraging range distance from FFC SPA, and it would be beneficial for the location to be close enough to FFC SPA for colony interchange to be a possibility. The search area for a breeding colony would therefore be located approximately beyond 55 km and broadly around 100 km from the FFC SPA or greater where an existing colony is present in the case of repurposing. Other information has also been considered such as information on prey, presence of designated sites and planned, under construction and operational wind farm locations.
- 8.1.1.7 In respect of commercial site selection criteria, existing assets have been identified using open data sources from The Crown Estate, including offshore wind farms, minerals and aggregates, offshore mines, oil and gas and dredging disposal sites. Additionally, known future assets, such as Round Four offshore wind farm lease areas and carbon capture, utilisation and storage (CCUS), have been identified. A 500 m buffer has been applied to all assets (aside from Offshore windfarms for which a 5 km buffer has been applied as advised by the Crown Estate) and have been excluded from site selection. The Applicant is undertaking continued consultation with The Crown Estate and operators to ensure commercial criteria used for site selection is appropriate and robust.
- 8.1.1.8 Following the heatmapping process described above, a potential area of highest ecological opportunity measuring 140 km by 70 km was identified.
- 8.1.1.9 Following the DCO Application, this area has been further refined and informed by technical, environmental and commercial considerations as well as consultation with relevant stakeholders. The process included:
- Focusing on areas that are most suitable, "green" in the heatmap results (see [B2.7.5 Compensation measures for FFC SPA: Artificial Nesting: Site Selection and Design \(APP-191\)](#) for the criteria used in creating the heatmap);
  - Reviewing platform nesting survey results to identify where birds are already nesting in the Southern North Sea to maximise colonisation potential;
  - Seeking further advice from ornithological specialists on ecological suitability of proposed locations;
  - Taking into account existing and future windfarms in terms of distance and orientation;
  - Review of shipping data to avoid shipping routes;
  - Review of other infrastructure and other industry areas such as aggregates and dredging, disposal sites and licenced areas;
  - Review of commercial fisheries data; and

- Consultation with key stakeholders including the Maritime and Coastguard Agency (MCA), Trinity House, Natural England, the Marine Management Organisation and the National Federation of Fishermen's Organisations (NFFO).

As a result of the above process a refined area of search for a new offshore nesting structure consisting of a 10 km x 10 km section of the heatmap has been identified and is shown in **Figure 3**. The refined area of search is approximately 70 km from FFC SPA at its nearest point. The refined area is in proximity to a number of platforms and upon one such platform over 300 kittiwake apparently occupied nests have been observed during the Hornsea Four Summer 2021 boat based surveys. The summer 2022 surveys of nesting seabirds on oil and gas platforms will further inform the analysis of kittiwake populations on the preferred structure for repurposing, and also the structures close to the area selected for a new structure, instead of a repurposed structure if required.



**Figure 3 Proposed new structure refined search area and preferred repurposing option location with heatmap analysis.**

8.1.1.10 In support of the above refinement process, the Applicant has undertaken geophysical surveys and geotechnical investigations in Q2 2022 to inform the selection of a precise location, to ensure suitable ground conditions for construction and to inform the technical design of the artificial nesting structure. A full account of the criteria for the site selection process undertaken to date is provided in **B2.7.5 Compensation measures for FFC SPA: Artificial Nesting: Site Selection and Design (APP-191)**.

8.1.1.11 The Applicant is working closely with other developers to find opportunities for early collaboration, to consider strategic artificial nesting compensation measures, opportunities



for co-location of measures, collaborative evidence gathering and implementation. This could for example lead to the sharing of artificial nesting structures on or offshore.

## 9. Monitoring and Adaptive Management

- 9.1.1.1 Monitoring forms an integral component of the compensatory measure and will be discussed with relevant stakeholders through the OOEG on both an individual compensation project scale, and at a strategic level.
- 9.1.1.2 The success in deployment of the kittiwake artificial nest structure will be monitored through observations of the number of breeding birds and their breeding success. Monitoring of these rates will follow the standard methods provided by Walsh *et al.*, (1995) and specified by the Joint Nature Conservation Committee's (JNCC) Seabird Monitoring Programme which acts as the hub of seabird population information. All relevant monitoring data collected during the project will be contributed to the JNCC's Seabird Monitoring Programme. Collection of seabird data in this format will allow comparisons to be made with on-going monitoring at existing colonies along the east coast of England, including that undertaken by the RSPB at the FFC SPA (Babcock *et al.*, 2018). In order to monitor the number of breeding birds and their breeding success whole colony counts and productivity monitoring will be conducted at the artificial nest sites.
- 9.1.1.3 Post construction, monitoring of the artificial nesting structure will be conducted to record nesting birds of the first breeding season and will continue for the lifetime of the offshore wind farm project (while also informing adaptive management and maintenance). The precise nature of monitoring at the structure will be influenced by the final form and location the compensation measure takes, but the intention is to predominantly carry out remote monitoring using cameras on the structure. It is noted within the relevant Evidence Reports, that the exact methods required may differ between an onshore and offshore structure, but the design of the structure will seek to incorporate monitoring whilst minimising disturbance. The frequency, duration and nature of the monitoring will be discussed with OOEG members following the Applicant's decision on the refined areas of search for the structure. (**B2.7.1 Compensation measures for FFC SPA: Offshore Artificial Nesting: Ecological Evidence (APP-187)**, **B2.7.3 Compensation measures for FFC SPA: Onshore Artificial Nesting: Ecological Evidence (APP-189)**). The details of the monitoring will be set out within the KCIMP for approval by the Secretary of State.
- 9.1.1.4 Monitoring of the artificial nesting structure will inform the adaptive management programme (see **Section 9.1.2**) and influence any potential maintenance work required on the structure (either repurposed or new). With reference to adaptive management, monitoring of breeding pairs and breeding success each breeding season will likely determine the employment of adaptive management the following season.
- 9.1.1.5 In addition to the monitoring of compensation effectiveness outlined above, the deployment of an artificial nesting structure (either repurposed or new) for kittiwake presents an opportunity for research and monitoring at a strategic level. Furthermore, providing access to birds and their nests through structure design can facilitate further research opportunities, and projects to increase understanding of adult survival. Such research could help deliver some of the strategic research opportunities identified by stakeholders through the Offshore Wind Strategic Monitoring and Research Forum (OWSMRF) (Ruffino *et al.*, 2020). Such opportunities could include the following:
- RO3.1c - Undertake targeted empirical data collection as informed by the sensitivity analyses (RO3.1b);

- RO3.3c - Deploying strategic adult kittiwake mark-recapture at multiple colonies, and analyses of re-sighting data (Re-trapping Adults for Survival (RAS) studies);
- RO3.3d - Deploying strategic chick mark-recapture at multiple colonies, and analyses of re-sighting data; and
- RO3.9b - Regional comparison of kittiwake diets during the breeding season: field studies.

9.1.1.6 Hornsea Project Three has already committed to delivering some of the OWSMRF research in relation to kittiwake diet and Hornsea Four could build on and complement this work. The Applicant is therefore motivated to contribute to strategic level monitoring for this species. It is also important to note the Hornsea Four Outline Ornithological Monitoring Plan report (**F2.19: Outline Ornithological Monitoring Plan (APP-254)**) which sets out the proposed approach and objectives of any ornithological monitoring required by the Deemed Marine Licences (DMLs) prior to the granting of development consent. The report considers kittiwake along with other seabird species (including guillemot and razorbill).

9.1.1.7 As stated above, the monitoring taken forward will be consulted on with the OOEG and detailed in the KCIMP that will be submitted for approval prior to the commencement of the authorised project.

## **9.1.2 Adaptive Management**

9.1.2.1 Adaptive management is an iterative, post-consent process which combines management measures and subsequent monitoring with the aim of improving effectiveness whilst also updating knowledge and improving decision making over time. Adaptive management will be an important component of the compensation measure and used as a method to address unforeseen issues or deviations from expected time scales (i.e. colonisation rate of structure). Adaptive management measures are therefore designed to support the compensation measure once functioning as a way of furthering the success and supporting resilience of the measure. All known issues and risks will be mitigated through good design of the structure and routine maintenance.

9.1.2.2 Any adaptive measures will be explored with relevant stakeholders as part of the OOEG to identify an initial list of potential approaches within identified parameters. At this early stage, some potential adaptive management options have been identified in the following examples:

9.1.2.3 Extension of structure to facilitate further nesting spaces;

- Additional protection from elements;
- Provision of nesting material;
- Enhanced recruitment support – kittiwake calls, decoys etc; and
- Provision of supplementary food.

9.1.2.4 A full list of adaptive management measures will be detailed within the implementation and monitoring plan (following discussion with the OOEG).

9.1.2.5 Multiple adaptive management measures will be explored prior to the construction of the artificial nesting structure as it is important to consider the differences between intelligent structure design (which is covered in a separate section) and maintenance activity<sup>4</sup>, and

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<sup>4</sup> It is worth noting at this stage that ad-hoc maintenance, not linked to adaptive management, to the structure will also be highlighted by the monitoring plan. This will allow any remedial works or repairs to be conducted during the non-breeding season when breeding birds are not present at the structure (further information is provided in the relevant Evidence Report).

adaptive management. The site selection process gives weight to locations where productivity for kittiwake in relation to prey availability is favourable and the population is expanding to give confidence that this would not be an issue, especially in the short to medium term.

- 9.1.2.6 For kittiwake, acknowledging that there is natural large inter-annual variability in prey resource (forage fish recruitment), there may be short term (1-2 years) opportunities to enhance the availability of prey at or adjacent to the structure (either new or repurposed) in the breeding season (if required). This is discussed in more detail in the Evidence Reports ([B2.7.1 Compensation measures for FFC SPA: Offshore Artificial Nesting: Ecological Evidence \(APP-187\)](#), and [B2.7.3 Compensation measures for FFC SPA: Onshore Artificial Nesting: Ecological Evidence \(APP-189\)](#)) and within the Supporting Evidence for Seabird Prey Resource report ([B2.6.2 Compensation Measures for FFC SPA: Prey Resource Evidence \(APP-185\)](#)). Exact methods will be discussed with the OOEG. In the mid to long term, the results of the initial diet studies together with fisheries data (Inshore Fisheries and Conservation Authorities (IFCA), International Council for the Exploration of the Sea. (ICES) etc.) could be used to inform temporary measures to increase productivity at the structure.
- 9.1.2.7 The data collected will be shared with relevant advisors and authorities in order to inform consideration of fisheries management by UK government, if required. Any long-term challenges to the effectiveness of the artificial nest structure relating to prey resource should be viewed in a North Sea context and in the context of natural variability, climate change and other pressures. In the event that the Applicant, in consultation with the OOEG, concludes that the artificial nesting structure is ineffective in delivering compensation and after all adaptive management options relating to the performance of the structure have been exhausted, the Applicant will consult with the OOEG with the aim of identifying alternative long-term compensation measures that are securable, deliverable and proportionate to the impact on the kittiwake at FFC SPA. In such circumstances, the Applicant will update the KCIMP and will carry out the updated Plan as approved. Adaptive management measures are designed to support the compensation measure once functioning (post construction) as a way of furthering the success and supporting resilience of the measure (Evidence Reports ([B2.7.1 Compensation measures for FFC SPA: Offshore Artificial Nesting: Ecological Evidence \(APP-186\)](#), [B2.7.3 Compensation measures for FFC SPA: Onshore Artificial Nesting: Ecological Evidence \(APP-189\)](#))). As mentioned above, adaptive management will be linked closely to the monitoring plan, the full detail of which will be agreed through the OOEG and set out within the KCIMP.
- 9.1.2.8 The Applicant is heavily involved in advancing the offshore wind industry's strategic compensation outlook. They have initiated and led the composition of strategic compensation groups; drawing together offshore wind developers and government bodies to increase knowledge and develop synergies to deliver compensation which will secure renewable energy and support the Government's ambitious energy targets. The Applicant will ensure it stays abreast of the advancements made by the group and is well placed to support and join any strategic compensation options developed by the fund.
- 9.1.2.9 An alternative approach than that outlined above is for the Applicant to contribute to a fund as an adaptive management measure. Reference can be made to the *Marine Net Gain – Consultation on the principles of marine net gain* dated 7<sup>th</sup> June 2022 (Defra, 2022), which includes reference to the newly announced Marine Recovery Fund (MRF). The MRF proposes a "contributions based approach" to net gain requirements, but has been given a broad application to be used to develop strategic compensation. The MRF forms part of the

Offshore Wind Environmental Improvement Package of the BESS. The Applicant has proposed wording below in [Section 12](#) in relation to the option to contribute to the MRF for adaptive management.

## 10. Decommissioning

- 10.1.1.1 The requirement for, and the exact nature of decommissioning the offshore nesting structure, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
- 10.1.1.2 For a new structure, the Applicant will design the structure for a design life equal to that of the windfarm (i.e. 35 years plus three years) to establish the compensation measures, pre-wind farm operation. Therefore, the lifetime of the structure is approximately 38 years). In the final few years of wind farm operation, the Applicant will commence inspections and surveys of the bird nesting structure to determine if an extension of the lifetime is possible.
- 10.1.1.3 Similarly, a repurposed platform would remain in place for the operational lifetime of the windfarm. The decommissioning of the platform will therefore be considered as part of the planning and consents process in consultation with the relevant regulatory bodies.
- 10.1.1.4 Owners of platforms are currently required to remove infrastructure relatively soon following cessation of production from a field and in accordance with a decommissioning programme approved by the Offshore Petroleum Regulator for Environment and Decommissioning ("OPRED"). However, currently available platform decommissioning plans propose that certain infrastructure will remain in-situ on the seabed and will not be removed, such as rock protection at pipeline crossings. The platforms of interest to the Applicant are those with an existing colony of kittiwake that are due for decommissioning. In these circumstances the owners will already have a decommissioning programme in place, which if approved will require the approval of OPRED and the Secretary of State for Business Energy and Industrial Strategy to amend. The current proposal is that the platform would be reclassified as an offshore renewable installation and removed from the existing decommissioning programme. The decommissioning of the platform would then be governed by the decommissioning programme submitted pursuant to the Energy Act 2004 for the windfarm.
- 10.1.1.5 The Applicant is also confident that a derogation from the Convention for the Protection of the Marine Environment of the North-East Atlantic ("OSPAR") requirements. to allow a particular piece of infrastructure to remain in situ for a particular period of time is not required, however there are ongoing discussions with OSPAR in this regard. The NSTA are tasked with considering the re-use of infrastructure in line with the waste hierarchy of reduce, re-use, recycle, energy recovery and dispose. It is therefore a requirement to consider the re-use of a platform before committing to decommission. The OSPAR requirements must therefore be read in parallel with the waste hierarchy requirements. An important point of distinction between onshore nesting and offshore nesting is the application of OSPAR to offshore nesting. It is not possible to include a requirement in the DCO for the structure to remain in situ in perpetuity without further recognition of the UK's obligations under OSPAR.
- 10.1.1.6 The owner of the platform will also need to consent to an amendment to the decommissioning programme as they will have planned their decommissioning operations in accordance with an agreed work programme and budget. The owners would need to consent to changing the scope of the decommissioning programme particularly in circumstances where the structure is adapted, for example the removal of the topside to leave the jacket in place. In those circumstances the existing owner would decommission the

topside and the Applicant would likely be responsible for decommissioning the jacket together with any new topside/additions. These issues can be addressed pursuant to a commercial arrangement governing the transfer of the platform to the Applicant.

10.1.1.7 Once the current decommissioning programme has been amended it is anticipated that OPRED will continue with its role in approving the decommissioning programmes pertaining to the associated infrastructure (all infrastructure save for the platform) following transfer of the platform from an owner to the Applicant. The preferred approach is for the Offshore Renewables and Energy Infrastructure (OREI) team within BEIS to approve the decommissioning of the platform further to a decommissioning plan submitted by the Applicant pursuant to the Energy Act 2004. In the alternative the Marine Management Organisation have the powers to include conditions relating to the decommissioning of the platform within the marine licence under the Marine and Coastal Access Act 2009. The conclusion reached by the Applicant is that there is an existing regime that is fit for purpose to ensure the decommissioning of the platform is sufficiently regulated.

10.1.1.8 The Applicant acknowledges that there will be ongoing liabilities, inclusive of decommissioning liabilities that will need to be considered as part of any commercial arrangement to transfer the platform from the current owners to the Applicant. Providing the Applicant can work with OPRED, BEIS and the NSTA to ensure all stakeholders are aligned regarding the repurposing of the platform, noting the application of the petroleum regulatory regime, particularly as the Applicant could be subject to the provisions of Section 29 of the Petroleum Act 1998 and may be required to post security to share in the costs of the decommissioning of the proposed infrastructure. The posting of security will be dependent upon how the platform is transferred to the Applicant and the ongoing discussions with the regulators. A high-level review has concluded that there should not be an impediment to the Applicant being caught by the existing decommissioning provisions pursuant to the Petroleum Act 1998 however the Applicant has explored other options under the existing regulatory framework for offshore renewables. The Applicant has revisited whether the platform can be reclassified so that its refurbishment, operation, maintenance and decommissioning can fall under the Marine and Coastal Access Act 2009 and for the Marine Management Organisation to regulate the use of the platform and has concluded there is no legal impediment in this regard. These discussions continue with regulators, but the current objective is to seek agreement in principle that the platform can be reclassified and regulated under the existing regulatory framework for offshore renewables.

## **11. Securing key consents and seabed agreements**

11.1.1.1 The Applicant may need to adapt the structure as outlined in [Section 7](#) Design Considerations. Part 4 of the Marine and Coastal Access Act 2009 states that a person may only carry on a licensable activity (or cause or permit any other person to carry on a similar activity) in accordance with the grant of a marine licence. It is unlikely that an exemption will apply to the requirement for a licence and therefore if adaptations to the identified platforms are required or indeed a new structure is preferred, the Applicant will apply for a Marine Licence. It is understood that the Marine Management Organisation (MMO) will aim to decide applications within thirteen weeks of validation of the application post submission. Stakeholder engagement will continue with the MMO in advance of submission of the Marine

Licence application and the Applicant is confident that the necessary Marine Licence will be granted.

**11.1.1.2** For a new structure, the necessary seabed rights will need to be secured with the owner of the seabed. This is likely to be the Crown Estate, although if the structure is located within the foreshore (the intertidal zone between mean high-water springs and mean low water springs) a land referencing exercise will need to be undertaken to identify the owner of the foreshore. The Crown Estate is responsible for around half of the foreshore around England, Wales and Northern Ireland. The Crown Estate has the right to lease and licence these areas for a wide range of uses. The other portion of foreshore is likely to be The Crown Estate owned, but not registered or alternatively in private ownership. The refined area of search is outside of the foreshore and the Crown Estate are the owners. Once the location of the new structure has been identified, exclusivity will be sought by the Applicant with a view to entering into a lease prior to construction. If an alternative area is pursued located in the foreshore and it is not owned by the Crown Estate, the Applicant will follow the process set out in the onshore nesting document (**B2.7.5: Compensation measures for FFC SPA: Onshore Artificial Nesting Roadmap** submitted at Deadline 5) to secure a voluntary agreement.

## 12. Draft DCO wording

### Commentary:

Article 40 of the draft DCO currently gives effect to Schedule 16 of the draft DCO:

### Compensation provisions

*40. Schedule 16 (compensation to protect the coherence of the national site network) has effect.*

Part 1 and Part 2 of Schedule 16 makes provision for compensatory measures for kittiwake.

Part 3 of Schedule 16 makes provision for a contribution to the Marine Recovery Fund.

Part 4 of Schedule 16 makes provision for fish habitat enhancement.

If necessary, the Secretary of State could amend Schedule 16 to secure compensatory measures for gannet, guillemot and razorbill, in accordance with the draft provisions set out below.

For the avoidance of doubt, no amendment would be required to article 40, which as noted above already gives effect to the entirety of Schedule 16.

### Schedule 16

#### COMPENSATION TO PROTECT THE COHERENCE OF THE NATIONAL SITE NETWORK

#### Part 1

#### OFFSHORE ORNITHOLOGY ENGAGEMENT GROUP

1. In this Schedule—

"Defra" means the Department for the Environment, Food and Rural Affairs.

"the FFC" means the site designated as the Flamborough and Filey Coast Special protection Area; "GCIMP" means the gannet compensation implementation and monitoring plan for the delivery of measures to compensate for the predicted loss of adult gannet from the FFC as a result of the authorised development;

"GRCIMP" means guillemot and razorbill compensation implementation and monitoring plan for the delivery of measures to compensate for the predicted loss of adult guillemot and razorbill from the FFC as a result of the authorised development;

"KCIMP" means the kittiwake compensation implementation and monitoring plan for the delivery of measures to compensate for the predicted loss of adult kittiwakes from the FFC as a result of the authorised development;

"the gannet compensation plan" means the document certified as the gannet compensation plan by the Secretary of State for the purposes of this Order under article 38 (certification of plans and documents, etc);

"the guillemot and razorbill compensation plan" means the document certified as the guillemot and razorbill compensation plan by the Secretary of State for the purposes of this Order under article 38 (certification of plans and documents, etc);

"the Hornsea Four Offshore Ornithology Engagement Group" or "H4 OOEG" means the group that will assist, through consultation, the undertaker in the delivery of the compensation measures identified in the kittiwake compensation plan, the gannet compensation plan and the guillemot and razorbill compensation plan;

"the kittiwake compensation plan" means the document certified as the kittiwake compensation plan by the Secretary of State for the purposes of this Order under article 38 (certification of plans and documents, etc.);

2. "the Marine Recovery Fund" means the fund operated by Defra pursuant to the Offshore Wind Environmental Improvement Package of the British Energy Security Strategy (April 2022) for the implementation of strategic compensation or any equivalent fund established by a Government body for that purpose.

"the offshore compensation measures" means, as the context requires, bycatch reduction and/or the offshore nesting structure(s); and "the onshore compensation measure" means, as the context requires, predator eradication and/or the onshore nesting structure(s).

3. Work Nos. 1, 2, 3, 4 and 5 together with any associated development offshore may not be commenced until a plan for the work of the H4 OOEG has been submitted to and approved by the Secretary of State, such plan to include—

terms of reference of the H4 OOEG;

details of the membership of the H4 OOEG which must include—

the MMO and the relevant statutory nature conservation body as core members for the offshore compensation measures;

the relevant local planning authority and statutory nature conservation body as core members for the onshore compensation measures;

the RSPB and The Wildlife Trust as advisory members, for both the onshore compensation measures and/or the offshore compensation measures subject to their area of expertise;

details of the proposed schedule of meetings, timetable for preparation of the KCIMP, the GCIMP and the GRCIMP and reporting and review periods;

the dispute resolution mechanism and confidentiality provisions; and

4. the scope of work to be limited to the topics for discussion as identified by the appointed chair to include in relation to the compensation measure, monitoring and adaptive management.

**Part 2**

## KITTIWAKE COMPENSATION

1. Following consultation with the H4 OOEG, the KCIMP must be submitted to the Secretary of State for approval in consultation with the MMO and relevant statutory nature conservation body for the offshore compensation measure (if required), and with the relevant local planning authority and relevant statutory nature conservation body for the onshore compensation measure (if required). The KCIMP must be based on the strategy for kittiwake compensation set out in the kittiwake compensation plan and include—
  - a. details of location where the compensation measure will be delivered, and in the event an onshore structure is required, details of landowner agreement(s) and in the event an offshore structure is required, details of any relevant seabed agreement(s);
  - b. details of the design of the artificial nesting structure; including the projected number of nests that will be accommodated on the structure, and how risks from avian or mammalian predation and for an onshore nesting structure how unauthorised human access will be mitigated;
  - c. an implementation timetable for delivery of the artificial nesting structure, such timetable to ensure that the structure is in place to allow for at least three full kittiwake breeding seasons prior to operation of any turbine forming part of the authorised development. For the purposes of this paragraph each breeding season is assumed to have commenced on 1st April in each year and ended on 31st August;
  - d. details of the maintenance schedule for the artificial nesting structure;
  - e. details for the proposed ongoing monitoring of the measure including—
    - i. survey methods;
    - ii. survey programmes; and
    - iii. colony and productivity counts;
  - f. recording of H4 OOEG consultations;
  - g. details of any adaptive management measures, with details of the factors used to trigger any such measures; and
  - h. provision for reporting to the Secretary of State, to include details of the use of the structure by breeding kittiwake to identify barriers to success and target any adaptive management measures.
  - i. provision for the option to be exercised at the sole discretion of the undertaker to pay a contribution (in addition to the sum stipulated in Part 3 of this Schedule) to the Marine Recovery Fund wholly or partly in substitution for the onshore compensation measure and/or the offshore compensation measure or as an adaptive management measure for the purposes of paragraph 1.g. of this Part of this Schedule. The sum of the contribution to be agreed between the undertaker and Defra in consultation with the OOEG and included in the KCIMP.
2. Paragraphs 3, 4 and 5 of this Part of this Schedule shall not apply to the extent that a contribution to the Marine Recovery Fund has been elected in substitution for the onshore compensation measure and/or the offshore compensation measure for the purposes of paragraph 1(i) of this Part of this Schedule.
3. The undertaker must construct the artificial nesting structure as set out in the KCIMP approved by the Secretary of State.
4. The undertaker must notify the Secretary of State of completion of construction of the artificial nesting structure as set out in the KCIMP.
5. The artificial nesting structure must not be decommissioned without prior written approval of the Secretary of State in consultation with relevant statutory nature conservation body.
6. The KCIMP approved under this Schedule includes any amendments that may subsequently be approved in writing by the Secretary of State. Any amendments to or variations of the approved



KCIMP must be in accordance with the principles set out in the kittiwake compensation plan and may only be approved where it has been demonstrated to the satisfaction of the Secretary of State that it is unlikely to give rise to any materially new or materially different environmental effects from those considered in the kittiwake compensation plan.

### **Part 3**

#### CONTRIBUTION TO MARINE RECOVERY FUND

1. No turbine forming part of the authorised development may begin operation until the undertaker has paid the sum of £500,000 (five hundred thousand pounds) to the Marine Recovery Fund.

### **PART 4**

#### FISH HABITAT ENHANCEMENT

1. No turbine forming part of the authorised development may begin operation until arrangements for the implementation of fish habitat enhancement measures have been put in place in accordance with the principles set out in the KCIMP, the GCIMP and the GRCIMP.

### **PART 5**

#### GANNET COMPENSATION

1. Following consultation with the H4 OoEG, the GCIMP must be submitted to the Secretary of State for approval in consultation with the MMO and relevant statutory nature conservation body for the offshore compensation measure(s) (if required), and with the relevant local planning authority and relevant statutory nature conservation body for the onshore compensation measure (if required). The GCIMP must be based on the strategy for gannet compensation set out in the gannet compensation plan and must include:
  - a. for the artificial nesting structure measure:
    - i. details of the location where compensation measure will be delivered, and in the event an onshore structure is required, details of landowner agreement(s) and in the event an offshore structure is required, details of any relevant seabed agreement(s);
    - ii. details of the design of the artificial nesting structure; including the projected number of nests that will be accommodated on the structure, and how risks from avian or mammalian predation and for an onshore nesting structure how unauthorised human access will be mitigated;
    - iii. an implementation timetable for delivery of the artificial nesting structure, such timetable to ensure that the structure is in place to allow for at least three full gannet breeding seasons prior to operation of any turbine forming part of the authorised development. For the purposes of this paragraph each breeding season is assumed to have commenced on 1st April in each year and ended on 31st August
    - iv. details of the maintenance schedule for the artificial nesting structure;
    - v. details for the proposed ongoing monitoring of the measure including
      - vi. 1. survey methods;
      - vii. 2. survey programmes; and
      - viii. 3. colony and productivity counts;
    - ix. recording of H4 OoEG consultations;

- x. details of any adaptive management measures, with details of the factors used to trigger any such measures; and
  - xi. provision for reporting to the Secretary of State, to include details of the use of the structure by breeding gannet to identify barriers to success and target any adaptive management measures;
  - xii. provision for the option to be exercised at the sole discretion of the undertaker to pay a contribution (in addition to the sum stipulated in Part 3 of this Schedule) to the Marine Recovery Fund wholly or partly in substitution for the onshore and/or offshore artificial nesting structures or as an adaptive management measure for the purposes of paragraph 1.a.vii of this Part of this Schedule. The sum of the contribution to be agreed between the undertaker and Defra in consultation with OOEG and included in the GCIMP.
- b. for the bycatch reduction measure:
- i. details of relevant technology supply agreements and arrangements with fishers to use the bycatch reduction technology that will be or have been secured by the undertaker;
  - ii. an implementation timetable for provision of the bycatch reduction measure, such timetable to ensure that contract(s) are entered into with fishers for the provision and use of bycatch reduction technology no later than one year prior to the operation of any turbine forming part of the authorised development;
  - iii. details for the proposed ongoing monitoring of the measure including collection of data from participating fishers;
  - iv. recording of H4 OOEG consultations;
  - v. details of any adaptive management measures and details of the factors used to trigger any such measures; and
  - vi. provision for annual reporting to the Secretary of State, to identify barriers to success and target any adaptive management measures.
  - vii. provision for the option to be exercised at the sole discretion of the undertaker to pay a contribution (in addition to the sum stipulated in Part 3 of this Schedule) to the Marine Recovery Fund wholly or partly in substitution for the bycatch measures or as an adaptive management measure for the purposes of paragraph 1.b.v of this Part of this Schedule. The sum of the contribution to be agreed between the undertaker and Defra in consultation with OOEG and included in the GCIMP.
2. Paragraphs 3, 4 and 5 of this Part of this Schedule shall not apply to the extent that a contribution to the Marine Recovery Fund has been elected in substitution for the onshore compensation measure and/or the offshore compensation measure and/or the bycatch compensation measure for the purposes of paragraphs 1.a.ix and 1.b.vii of this Part of this Schedule.
  3. The undertaker must construct the artificial nesting structure and enter into contract(s) with fishers for the provision and use of bycatch reduction technology as set out in the GCIMP approved by the Secretary of State.
  4. The undertaker must notify the Secretary of State of completion of construction of the artificial nesting structure and the entering into contract(s) with fishers for the provision and use of bycatch reduction technology as set out in the GCIMP.
  5. The artificial nesting structure must not be decommissioned without prior written approval of the Secretary of State in consultation with relevant statutory nature conservation body.
  6. The GCIMP approved under this Schedule includes any amendments that may subsequently be approved in writing by the Secretary of State. Any amendments to or variations of the approved GCIMP must be in accordance with the principles set out in the gannet compensation plan and may only be approved where it has been demonstrated to the satisfaction of the Secretary of State that it is unlikely to give rise to any materially new or materially different environmental effects from those considered in the gannet compensation plan.

**PART 6**

## GUILLEMOT AND RAZORBILL COMPENSATION

1. Following consultation with the H4 OOEG, the GRCIMP must be submitted to the Secretary of State for approval in consultation with the MMO and relevant statutory nature conservation body for the offshore compensation measure, and with the relevant statutory nature conservation body and the relevant local planning authority and relevant conservation trusts for the onshore compensation measure. The GRCIMP must be based on the strategy for guillemot and razorbill compensation set out in the guillemot and razorbill compensation plan and include:
  - a. for the predator eradication measure:
    - i. details of the location(s) where the compensation measure will be delivered;
    - ii. details of how any necessary access rights, licences and approvals have or will be obtained and any biosecurity measures will be or have been secured;
    - iii. an implementation timetable for delivery of the predator eradication measure, such timetable to ensure that the predator eradication method has commenced no later than two years prior to operation of any turbine forming part of the authorised development;
    - iv. details for the proposed ongoing monitoring of the measure including:
      - v. 1. survey methods;
      - vi. 2. survey programmes;
      - vii. 3. productivity rates;
      - viii. 4. breeding population; and
      - ix. 5. distribution of breeding birds;
    - x. recording of H4 OOEG consultations;
    - xi. details of any adaptive management measures, with details of the factors used to trigger any such measures; and
    - xii. provision for reporting to the Secretary of State, to include details of the use of the location(s) by breeding guillemot and razorbill to identify barriers to success and target any adaptive management measures.
    - xiii. provision for the option to be exercised at the sole discretion of the undertaker to pay a contribution (in addition to the sum stipulated in Part 3 of this Schedule) to the Marine Recovery Fund wholly or partly in substitution for the predator eradication measures or as an adaptive management measure for the purposes of paragraph 1.a.vi. of this Part of this Schedule] The sum of the contribution to be agreed between the undertaker and Defra in consultation with OOEG and included in the GRCIMP.
  - b. for the bycatch reduction measure:
    - i. details of relevant technology supply agreements and arrangements with fishers to use the bycatch reduction technology that will be or have been secured by the undertaker;
    - ii. an implementation timetable for provision of the bycatch reduction measure, such timetable to ensure that contract(s) are entered into with fishers for the provision and use of bycatch reduction technology no later than one year prior to the operation of any turbine forming part of the authorised development;
    - iii. details for the proposed ongoing monitoring of the measure including collection of data from participating fishers;
    - iv. recording of H4 OOEG consultations;
    - v. details of any adaptive management measures and details of the factors used to trigger any such measures; and

- vi. provision for annual reporting to the Secretary of State, to identify barriers to success and target the adaptive management measures.
  - vii. provision for the option to be exercised at the sole discretion of the undertaker to pay a contribution (in addition to the sum stipulated in Part 3 of this Schedule) to the Marine Recovery Fund wholly or partly in substitution for the bycatch eradication measures or as an adaptive management measure for the purposes of paragraph 1.b.vi of this Part of this Schedule] The sum of the contribution to be agreed between the undertaker and Defra in consultation with OoEG and included in the GRCIMP.
2. Paragraphs 3 and 4 of this Part of this Schedule shall not apply to the extent that a contribution to the Marine Recovery Fund has been elected in substitution for the predator eradication measure and/or the bycatch compensation measure for the purposes of paragraphs 1.a.viii and 1.b.vii of this Part of this Schedule.
3. The undertaker must carry out the predator eradication method and enter into contract(s) with fishers for the provision and use of bycatch reduction technology as set out in the GRCIMP approved by the Secretary of State.
4. The undertaker must notify the Secretary of State of completion of the predator eradication method and entering into contract(s) with fishers for the provision and use of bycatch reduction technology set out in the GRCIMP.
5. The GRCIMP approved under this Schedule includes any amendments that may subsequently be approved in writing by the Secretary of State. Any amendments to or variations of the approved GRCIMP must be in accordance with the principles set out in the guillemot and razorbill compensation plan and may only be approved where it has been demonstrated to the satisfaction of the Secretary of State that it is unlikely to give rise to any materially new or materially different environmental effects from those considered in the guillemot and razorbill compensation plan.

### 13. Funding

- 13.1.1.1 The Applicant has identified the costs associated with the development, implementation and ongoing monitoring of the proposed compensation measure. These costs have been included within a detailed Derogation Funding Statement (**B2.10 10 Without Prejudice Derogation Funding Statement (APP-202)**). This statement is supplemental to the Funding Statement (**E1.1 CA Volume E1.1 Funding Statement (REP2-018)**) submitted as part of the suite of Application documents. The Funding Statement(s) outlines the overall project cost based on the capital expenditure and operational expenditure assumptions in the "Review of Renewable Electricity Generation Cost and Technical Assumptions" (Arup 2016). The Funding Statement(s) also detail the corporate structure and a robust explanation to allow the Secretary of State to conclude that the necessary funding to deliver the compensation measure can be secured.
    - 13.1.1.2 Part of the Funding Statement addresses the costs associated with decommissioning of a repurposed platform. As referred above it is likely that the costs of decommissioning the jacket could, in principle, be transferred to the Applicant. On the premise that the Applicant would accept liability for decommissioning of the platform which would be delayed to a future date and in view of the benefits associated with the repurposing of the platform for both the Applicant and the current owner of the platform, it is considered likely that the Applicant would either pay salvage value for the platform or perhaps pay a nominal value. The decommissioning costs including tax considerations, the potential for the Applicant to provide some form of security and the need to address the risk of both parties being subject

to the provisions of section 29 of the Petroleum Act 1998, can in principle be addressed as part of the commercial arrangement on transfer of the platform.

## 14. Legislative and political issues

14.1.1.1 The regulations which are currently in force within the UK Continental Shelf would not permit the retention of infrastructure indefinitely for nesting kittiwake as the OSPAR Regulations require infrastructure to be removed unless a specific derogation has been obtained. As referred above it is not the Applicant's intention to request a derogation from OSPAR as the Applicant does not propose to retain the ANS in perpetuity.

14.1.1.2 There has recently been a significant focus on the energy transition and, in particular, the potential re-use of offshore oil and gas infrastructure to accommodate the move towards "net zero" such as the re-use of infrastructure for the production of hydrogen and/or for carbon capture and storage purposes. The Applicant is in discussions with the NSTA, OPRED, OREI and the MMO to determine who is best placed to regulate the use of the asset once it has been transferred. There is the potential for the platform to be moved out of the oil and gas regulatory framework and into the framework to which the Applicant operates. This will require a reclassification as set out above.

14.1.1.3 The Applicant is confident that a clear description of how liabilities will be transferred/managed and funding arrangements for existing parties, as well as consideration of long-term liabilities will be addressed on a commercial basis prior to the end of Examination.

## 15. Conclusion

15.1.1.1 The Applicant is confident that the compensation measure is viable, will be effective and can be delivered. The Applicant will continue stakeholder engagement to demonstrate the suitability of the refined site selection and design and ensure the compensation measures can be readily achieved and secured.

## 16. References

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