Hornsea Project Four

Volume B2, Annex 8.2: Compensation measures for FFC SPA: Guillemot and Razorbill Bycatch Reduction: Roadmap

Deadline 2, Date: 29 March 2022
Document reference: B2.8.2
Revision: 03

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Doc. No: B2.8.2
Ver.: C

Revision Summary				
Rev	*Date*	*Prepared by*	*Checked by*	*Approved by*
01	28/09/2021	GoBe Consultants Ltd., September 2021	Dr Sarah Randall, Orsted, September 2021	Dr Julian Carolan, Orsted, September 2021
02	08/03/2022	GoBe Consultants Ltd., March 2022	Dr Sarah Randall, Orsted, March 2022	Dr Julian Carolan, Orsted, March 2022
03	29/03/2022	GoBe Consultants Ltd., March 2022	Dr Sarah Randall, Orsted, March 2022	Dr Julian Carolan, Orsted, March 2022

Revision Change Log			
Rev	*Page*	*Section*	*Description*
01	-	-	Submitted at Application
02	Amended throughout	Amended throughout	Removal of Gannet from the document for Deadline 1
02	7	1	Position on kittiwake AEoI conclusion
02	Amended throughout	Amended throughout	Updates on implementation studies for Deadline 1
03	15 - 20	8	Updates to DCO wording
03	Amended throughout	Amended throughout	Changes to implementation and monitoring plan names

Table of Contents

List of Tables

Glossary

Term	Definition
Compensation / Compensatory Measures	If an Adverse Effect on the Integrity on 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).
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 and kittiwake compensation plan and the razorbill and guillemot 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 and kittiwake compensation plan and the razorbill and guillemot compensation plan.
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).

Acronyms

Acronym	Definition
CfD	Contracts for Difference
DCO	Development Consent Order
FFC	Flamborough and Filey Coast
FID	Final Investment Decision
GRCIMP	Guillemot and Razorbill Compensation Implementation and Monitoring Plan
GRIMP	Guillemot and Razorbill Compensation Implementation and Monitoring Plan
LEB	Looming Eye Buoy
MMO	Marine Management Organisation
NGO	Non-Governmental Organisation
NFFO	National Federation of Fisheries Organisation
OOEG	Offshore Ornithology Engagement Group
PINS	Planning Inspectorate
RSPB	Royal Society for the Protection of Birds
SNCBs	Statutory Nature Conservation Bodies
SoS	Secretary of State
SPA	Special Protection Area
UK	United Kingdom

Introduction

1

1.1.1.1 This Guillemot and Razorbill Bycatch Reduction Roadmap document provides an overview of the next steps for implementation of bycatch reduction as a compensation measure for Hornsea Four, if deemed necessary by the Secretary of State following the Appropriate Assessment. It should be noted that this is a 'live' document 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 submission, the Applicant has revisited its conclusion of no potential for an adverse effect on integrity (AEoI) in respect of the kittiwake feature of the Flamborough and Filey Coast Special Protection Area (FFC SPA) from Hornsea Four in-combination with other plans and projects. It is important to note however that the Applicant maintains its position of no AEoI alone or in combination for all other qualifying species of the FFC SPA and for all other European sites. In light of the Applicant's updated position on kittiwake the Applicant has separated the compensatory measures for gannet and kittiwake into separate Roadmaps, Compensation Plans (and consequently separate Implementation and Monitoring plans). Upon reflection the Applicant has also separated the Roadmaps, Compensation Plans (and consequently the Implementation and Monitoring Plans) for the Auk species (Guillemot and Razorbill) and Gannet. All of the compensation measures remain "without prejudice" but this Roadmap has been updated to focus solely on guillemot and razorbill.

2 Description and scope

2.1.1.1 Bycatch reduction forms part of a suite of compensation measures also including predator eradication and fish habitat enhancement to compensate for the number of seabirds, specifically guillemot and razorbill that may be at risk of displacement from the operation of the Hornsea Four Wind Farm. The Applicant proposes to support the overall numbers of these birds through the reduction of bird bycatch in selected UK fisheries within the guillemot and razorbill biogeographic region. Seabirds are at risk from multiple anthropogenic threats, including bycatch in UK fisheries (Miles *et al.*, 2020). Bycatch – the incidental capture of non-target species in fisheries – can present a significant pressure on seabird populations (Miles *et al.*, 2020). Within recent decades, seabird populations have plummeted, largely due to commercial fisheries (direct competition and bycatch) (Croxall *et al.*, 2012). It has been estimated globally that hundreds of thousands of seabirds are

2.1.1.2 killed each year in gillnets (400,000; Žydelis *et al.*, 2013) and longline fisheries (320,000; Anderson *et al.*, 2011). Despite this, monitoring of the issue is lacking with onboard observer monitoring coverage relatively low compared to the scale of commercial fishing (Pott and Wiedenfeld, 2017).

The reduction of seabird bycatch will be achieved through the use of deterrent equipment attached to fishing nets at regular intervals. There are multiple types of reduction techniques that can be used to reduce the interaction between birds and fishing equipment. The Evidence Report **B2.8.1 Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence (APP-194)** sets out the ecological evidence for bycatch reduction measures and supports likely successful compensation measures. Bycatch reduction

techniques are designed to be suited to specific gear types and bycatch species. Defra and Cefas' joint Clean Catch initiative recommends bird bycatch reduction measures including modifications to fishing gear, changes to fishing and processing techniques, and devices for attachment to fishing gear. The proposed reduction methods considered as part of a suite of compensation measures are above water deterrents, net lights, and net panels. Above water deterrents are usually fixed to buoys or markers attached to set fishing gear, which work to scare birds away from fishing nets.

2.1.1.3 In order to determine the most effective bycatch reduction method, the Applicant commenced a bycatch reduction technology selection phase in 2021, focusing on the use of Looming Eye Buoys (LEB) within an active gillnet fishery within the biogeographic range of guillemot and razorbill. LEB were selected as they are one of the most developed forms of above water deterrent, which have been developed and trialled by BirdLife International/ RSPB in conjunction with Fishtek Marine (i.e., Rouxel *et al.,* 2021). The LEB is a rotating device (approximately 200 mm wide) with two panels which simulate predator eye patterns mounted on a pole to a fishing buoy. The opposite face of each LEB panel exhibits eyes of a difference size which creates a 'looming' effect when the panels rotate. The LEB is designed to rotate using wind power which provides unpredictable movements and speed rotations which intensify the likelihood of behavioural responses by seabirds and reduce the chances of habituation (Gregor *et al.,* 2014). Further information is presented within the Applicant's **B2.8.1 Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence (APP-194)**).

2.1.1.4 The bycatch reduction technology selection phase will further corroborate the substantial evidence already obtained on the efficacy of the LEB, specific to guillemot and razorbill bycatch within a commercial gillnet setting. The technology selection phase has been implemented within an area of high guillemot and razorbill bycatch (determined by Northridge *et al.*, 2020) and bycatch risk mapping undertaken by the Applicant and presented in **B2.8.1 Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence (APP-194)**). The technology selection phase focuses on the non-breeding season

2.1.1.5 when high densities of guillemot and razorbill occur along the south coast of the UK and overlap with high levels of gillnetting activity.

The Applicant is undertaking the LEB selection phase with two companies:

- 1) FishTek Marine Ltd
    - FishTek are a global leader in developing bycatch reduction techniques, and have previously developed techniques which have successfully aided in reducing bycatch in fisheries (e.g., Hookpod, Lumo lead, pingers).

2.1.1.6

- 2) SeaScope Fisheries Research
    - SeaScope are an independent consultancy who specialise in fisheries monitoring and research.

Through collaborating with two companies which have both undertaken successful studies within fisheries science, the Applicant is confident with the progress of the testing of the LEB and that the measures required for a successful study have been undertaken.

2.1.1.7 The Applicant has secured 10 fishers to take part in the reduction technology selection phase, with all boats being fitted with a dual camera monitoring systems to determine seabird bycatch when fishing with control and experimental nets (i.e., with the LEB deterrent attached). The reduction technology selection phase is taking place from November 2021 until March 2022 with data being subsequently analysed by fisheries experts and ornithologists to determine the effectiveness of the LEB as a compensation measure. The applicant notes that as the bycatch reduction selection phase is being undertaken within the target fishery, the findings will quantify the level of bycatch reduction achieved through using the LEB, and can therefore directly indicate the scale of deployment that the Applicant would be required to deliver to fulfil compensation.

2.1.1.8 The preliminary findings from the bycatch reduction technology selection phase using the LEB are promising, with an initial reduction in bycatch of auks identified. The significance of this reduction will be fully analysed following completion of the 2021/2022 bycatch reduction selection phase. Due to contractual restrictions, the results of the bycatch reduction selection phase can only be disclosed as percentage reductions in bycatch i.e. not specific numbers of birds, without consent from the participating fishers. However, a similar trial is running simultaneously under RSPB management which will likely have results published following analysis. without such restrictions.

2.1.1.9 There is scope to complete a second year in the winter of 2022/2023 should it be deemed necessary as a similar technology selection phase using LEBs is running simultaneously under RSPB management, or otherwise the Applicant will proceed to implementation. The Applicant is confident in securing the number of vessels required to fulfil compensation.

2.1.1.10 The technology taken forward as part of the compensation measure will be selected from this phase. The implementation of the bycatch compensation measure is flexible and scalable depending on the outcome of the bycatch technology selection phase and other compensation measures proposed. Work will be undertaken with local representatives and contacts within the target fishery areas (determined by fisheries consultation, published literature (i.e., Northridge *et al.*, (2020) and bycatch risk mapping undertaken by the Applicant and presented in **B2.8.1 Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence (APP-194)**) to ensure uptake of the bycatch reduction equipment. It is acknowledged by the Applicant that use of the equipment may need to be incentivised to ensure uptake and continued usage.

2.1.1.11

2.1.1.12 To ensure that the equipment continues to be used and that further evidence can be gathered to confirm the effectiveness of the measures, a monitoring programme will be required during the operational use of the technology, should they be taken forward as a compensation measure. There are many examples of fishing gear monitoring around the world, which include but are not limited to onboard observers, gear cameras, self-reporting, blue-tooth tags and equipment trackers. The exact method of monitoring will be decided based upon further evidence gathering and discussion with industry experts.

Hornsea Four is expected to operate for 35 years following construction. If required, the accepted measure(s) will be used and monitored throughout the operational lifespan of the Wind Farm. Following the monitoring programme, overall measure uptake and success of

the reduction measure, the equipment may continue to be used as a bycatch deterrent.

2.1.1.13 Having 12 operational windfarms in UK waters, the Applicant, has a longstanding relationship with the UK fishing industry, especially on the east and west coasts of England where positive and trusting relationships have been built over time. The Applicant also supports local fishing industries, proving good-will funding to fishers, and related organisations, that work within the vicinity of their wind farms which has further encouraged good relationships. The Applicant has a track record of encouraging co-existence between renewable energy development and the fishing industry and are often used as an example of best practise between the industries. The Applicant is positive that their pre-existing relationship with the fishing industry and representatives will aid the technology selection phase and compensation measure implementation.

2.1.1.14 The Applicant has started, and will continue, to enhance connections and relationships with fishers in regions of England, where netting activity is high. The Applicant has a high degree of confidence in the feasibility of delivering the compensation measure. Throughout the development of the technology selection phase and compensation implementation the Applicant will seek to further strengthen fisheries engagement, collaboration and relationships in the Southeast and Southwest.

2.1.1.15 The Applicant will take an appropriately precautionary approach for assessment work in order to increase the biogeographic population of adult birds by a sufficient margin to offset the predicted impact of Hornsea Four on an annual basis (**see Table 2 of B2.6 RP Volume B2 Chapter 6 Compensation measures for FFC SPA Overview (APP-183)**). The bycatch reduction measures will be used to compensate as part of a suite of measures. It is considered that guillemot, and razorbill can be sufficiently compensated through a suite of measures:

2.1.1.16
- Bycatch reduction;
- Predator eradication; and
- Fish habitat enhancement (as a resilience measure).

2.1.1.17 Therefore, the bycatch reduction measures, could collectively with the compensation measures, be scaled up to provide a ratio of 1:2. The reduction in mortality through the implementation of the suite of measures collectively are capable of over-compensation for the estimated potential impact to guillemot and razorbills from Hornsea Four (see **Table 2 of B2.6: Compensation Measures for FFC SPA Overview (APP-183)**).

Based upon a precautionary assessment the Applicant would consider provision of bycatch reduction measures across 7 vessels which would be confirmed following the bycatch reduction technology selection phase, in addition to the further additional measures as part of the compensation measures package (see 2.1.1.15). Following the bycatch technology selection phase, the number of vessels (and extent of the predator eradication programme) may increase or decrease depending on the level of success of the bycatch trial. These compensation measures have the benefit of being flexible and scalable to enable successful delivery of the compensation.

Indicative timescale for delivery and implementation

3 3.1.1.1 The high-level anticipated programme presented below (Table 1) is applicable to the implementation and delivery of the bycatch reduction compensation measure. Implementation of compensation measures will be subject to successful progression of the Hornsea Four project and determination of the need for compensation by the SoS. The decision on the requirement for and the scale of the suite of measures and inclusion of the predator eradication measure will be subject to the outcome of monitoring of the bycatch reduction technology selection phase to be determined in 2023. The timing of implementation of the bycatch reduction compensation measure is provisional as the timeframe for Examination, consent award, reaching final investment decision (FID) and Contracts for Difference Allocation Round Five and Six, have not yet been set. The programme has been carefully considered to ensure timely delivery of the compensation measure.

Table 1: Indicative timescale for delivery and implementation

Activity	Year	2021	2022	2023	2024	2025	2026	2027	2028
Design of technology selection phase	2021								
Bycatch technology selection phase	2021 2023								
Scale and package consideration	2023								
Anticipated Hornsea Four DCO Granted	2023								
Compensation Implementation[1]	2022/2023-TBC								
Bycatch implementation detailed design	2024								
Establishment of Offshore Ornithology Engagement Group (OOEG)	Following consent award								
Guillemot and Razorbill Compensation Implementation and Monitoring Plan (GRCIMP)	Following consent award								
GRCIMP submitted to SoS	Following consent award								
Offshore Construction of Hornsea Four Foundations	2026								
Offshore Construction of Hornsea Four Offshore Turbines	2027								

[1] Due to the uncertainty regarding Allocation Round 5 and 6 of the Contracts for Difference (CfD) scheme the date cannot be confirmed at this time.

Activity	Year	2021	2022	2023	2024	2025	2026	2027	2028
First Power (partially operational windfarm)	2028								

Consultation

4.1 Pre-examination

4 Technology selection for bycatch reduction was initiated in November 2021. The bycatch reduction technology selection phase will run until the end of March 2022 (see **Section 5** for further details). This technology selection phase is being designed in consultation with industry experts, the SNCB and the RSPB. Initial advice was sought to influence the methodology of the technology selection phase. It is planned that further consultation will be undertaken with these parties ahead of examination, as the technology selection phase is progressing, to review the implementation of the bycatch reduction techniques, along with the Applicant's proposed bycatch reduction measure. Following the bycatch reduction technology selection phase, currently anticipated to end March 2022, the Applicant will start the planning and processes for implementation.

4.1.1.1

4.2 Post-consent

4.2.1.1 A steering group named the OOEG shall be convened by the Applicant to assist the design, implementation, reporting, any necessary adaptive management and other relevant matters of the compensation measures as determined by the Applicant. The OOEG core members would be the relevant SNCB(s) and the MMO. The RSPB and NFFO would also be invited to form part of the OOEG as advisors. The purpose of this group would be to help shape and inform the nature and delivery of the compensation post consent.

4.2.1.2 A Guillemot and Razorbill Implementation and Monitoring Plan (GRCIMP) will be produced. The GRCIMP (following the content in the outline GGRIMP (**B2.8.7 Outline Gannet Guillemot and Razorbill Compensation Implementation and Monitoring Plan (APP-200)** submitted with the DCO application) noting that separate versions will be produced for gannet alone (Gannet Compensation Implementation and Monitoring Plan Bycatch and Gannet Compensation Implementation and Monitoring Plan Artificial Nesting Structure) and will be submitted at Deadline 5, which follow the removal of gannet from certain guillemot and razorbill documents). The GRCIMP will document all of the proposed compensation measures for guillemot and razorbill (including mechanisms and programme for delivery, monitoring, adaptive management, reporting). The OOEG will be consulted during development of the GRCIMP. The GRCIMP will be submitted to the Secretary of State for approval.

4.2.1.3

4.2.1.4 The implementation phase will involve consultation with stakeholders via the OOEG process to ensure cooperation across the monitoring aspects of the compensation measure. The proposed implementation process described below will be documented in the GRCIMP and will be submitted to the Secretary of State for approval.

The implementation of the compensation measures will be monitored to ensure that the bycatch reduction method is being applied in accordance with the GRCIMP. The details of

the monitoring phase of the compensation measure will be discussed with the OOEG and will be set out within the GRCIMP for approval by the Secretary of State.

Monitoring will inform any adaptive management required by the compensation measure and will be discussed with OOEG members before implementation. This will be continued until Hornsea Four has been decommissioned 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.

4.2.1.5

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 GRCIMP.

4.2.1.6

Design and implementation of the bycatch reduction project – Initial technology selection phase

5

The Applicant has identified locations with high guillemot and razorbill bycatch along the English south coast of England, particularly southeast and south west. This has been

5.1.1.1

determined by the risk mapping process outlined within the Guillemot and Razorbill Bycatch Evidence Report (**B2.8.1 Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence (APP-194)**), consultation with fisheries and other relevant stakeholders. The south east and south west locations have formed the basis of the bycatch reduction technology selection phase, and potentially the location of the compensation measure. The scale of compensation relative to the location specific factors (i.e., number of vessels to be included in the bycatch reduction technology selection and implementation) along with the methodology would be defined in consultation with the SNCB, the RSPB and relevant industry stakeholders.

5.1.1.2

As mentioned above, the Applicant commenced the bycatch technology selection using the LEB in November 2021. The Applicant has entered into a supply contract for the supply of the LEB equipment, has put the necessary contractual arrangements in place for payments to be made to the participating fishers to use the technology, has arranged for the necessary monitoring during the bycatch technology phase and has undertaken stakeholder engagement which will continue during the phase. Ten vessels were secured for the bycatch reduction technology selection phase within two months (with most of the fishers signing up within two weeks), demonstrating how rapidly fishers could be secured by the project. A number of other vessels are already expressing interest in participating in

5.1.1.3

future trials or long-term implementation of the measure. Such implementation would be secured via contracts between the Applicant and the fishermen with the support of a specialist fisheries consultancy. This would be organised following the bycatch reduction technology selection phase.

Following the analysis of the bycatch technology selection phase, the Applicant may consider undertaking technology selection of other potentially suitable bycatch reduction techniques, should it be deemed necessary, such as net illumination, visual net modifications (reflective nets and warning panels) and other above water deterrents (as identified in the Bycatch Evidence Report **B2.8.1 Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence (APP-194)**). The LEB currently presents the most promising potential for bycatch reduction in UK waters as identified in discussions with relevant stakeholders

and peer reviewed published research (Rouxel *et al.,* 2021), and so will form the focus of the initial selection phase. This has involved at-sea deployment of bycatch reduction technology within an active fishery. This phase involves control nets as well as experimental nets where the technology is being used. The methodology of the selection phase has been developed in conjunction with delivery partners, advisors (such as NGO's and fisheries stakeholders) and bycatch reduction technology developers to ensure best practice and a robust approach, which does not cause any safety or working implications for fishers. Preliminary findings from the LEB are promising, with an initial reduction in bycatch of auks identified. The significance of this reduction will be fully analysed following completion of the bycatch reduction selection phase and presented to the ExA at Deadline 5.

5.2 Implementation of the Bycatch Reduction Technology

5.2.1.1 Following the selection phase, a final bycatch reduction technology, or combination of technologies, will be selected for the compensation measure. Members of the OOEG will be consulted on the final fishery/fisheries location. Relevant fisheries stakeholder discussions will also be undertaken.

5.2.1.2 The approach taken to the delivery of bycatch reduction will be discussed with the OOEG as part of the development of the GRCIMP, taking into account the considerations of fisheries stakeholders and any relevant additional consideration of location specific issues.

5.2.1.3 The implementation of the bycatch reduction compensation measure will be overseen by a suitably qualified delivery partner such as a commercial fisherman/ technical specialist contractor.

6 Monitoring and adaptive management

6.1.1.1 A detailed monitoring and adaptive management protocol will be provided in the GRCIMP. This will be produced in consultation with OOEG members and other relevant parties so it is fit for purpose.

6.2 Monitoring

6.2.1.1 A monitoring package shall be designed with the delivery partner and the OOEG. Monitoring will focus on the progress and confirmation of a reduction in bycatch numbers for guillemot and razorbill. This would be informed by the bycatch technology selection phase (comparing the bycatch rate in the control nets to the experimental nets). The monitoring of results will be dependent on the implementation method. However, reduction monitoring for bycatch of other taxa is well known and synergies can be drawn and incorporated into the monitoring relevant to guillemot and razorbill. This would be developed with experienced stakeholders from both a conservation and fisheries background to ensure monitoring requirements are met.

6.2.1.2 Monitoring will continue for the operational phase of the compensation measure, at a frequency and method to be detailed in the GRCIMP. It is envisaged that the delivery partner would lead the monitoring component of this measure.

6.3 Adaptive Management

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. An adaptive management plan will be produced and outlined in the GRCIMP, which would list a set of options to ensure the long-term resilience of the measure. This process would be developed in consultation with the OOEG. If it becomes clear that some of the assumptions relating to key parameters that influence the establishment of the measure are not being realised as anticipated, adaptive management measures will be implemented to improve effectiveness and another technique or fishery type may be trialled and chosen for bycatch reduction, in consultation with the OOEG.

6.3.1.1

Legal agreement(s)

7

In order to undertake the bycatch reduction technology selection phase, the Applicant has entered into a supply contract with the bycatch reduction technology provider Fishtek Marine and the monitoring technology provider Seascope Fisheries Research Ltd. The agreements include provisions governing the supply and deployment of the technology, intellectual property rights relating to the specific technology, collection and dissemination of the data amongst other obligations to ensure the timely execution of the technology selection phase.

7.1.1.1

The contract requires the monitoring technology provider Seascope Fisheries Research Ltd to enter into individual agreements with fishers participating in the trial incorporating a payment and outlining the obligations on both parties to cover monitoring and the collection of data.

7.1.1.2

Following the bycatch technology selection phase it is anticipated that the technology that is deemed to have generated the most favourable outcomes will form the compensation measure. A long-term supply contract will be entered into to supply the technology and ensure its ongoing maintenance. In addition, the Applicant will enter into long term individual agreements with fishers to pay an annual sum for utilising the technology on their boats and monitoring bycatch.

7.1.1.3

8

The Applicant has confirmed that a marine licence would not be required for the selection phase or future implementation of the technology as the LEB forms part of the fishing equipment used by the fishers, and fishing is an exempted activity from marine licensing.

7.1.1.4

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 of Schedule 16 makes provision for compensatory measures for kittiwake.

Part 2 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. These adopt the drafting for kittiwake compensation specified in the draft DCO submitted at Deadline 2, with necessary amendments to apply to gannet, guillemot and razorbill compensation.

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—

"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.);

"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).

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

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—

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);

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;

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;

details of the maintenance schedule for the artificial nesting structure;

details for the proposed ongoing monitoring of the measure including—

survey methods;

survey programmes; and

colony and productivity counts;

recording of H4 OOEG consultations;

details of any adaptive management measures, with details of the factors used to trigger any such measures; and

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.

The undertaker must construct the artificial nesting structure as set out in the KCIMP approved by the Secretary of State.

The undertaker must notify the Secretary of State of completion of construction of the artificial nesting structure as set out in the KCIMP.

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.

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

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 4

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-
      1. survey methods;

2. survey programmes; and
3. colony and productivity counts;

vi. recording of H4 OOEG consultations;
vii. details of any adaptive management measures, with details of the factors used to trigger any such measures; and
viii. 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;

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 adapative management measures.

2. 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.

3. 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.

4. 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.

5. 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 5

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:
    1. survey methods;
    2. survey programmes;
    3. productivity rates;
    4. breeding population; and
    5. distribution of breeding birds;
v. recording of H4 OOEG consultations;
vi. details of any adaptive management measures, with details of the factors used to trigger any such measures; and
vii. 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 adapative management measures.

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 adapative management measures.

2. 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.

3. 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.

4. 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.

9

9.1.1.1

Funding

The Applicant has identified the costs associated with the implementation of the proposed compensation measure. These costs have been included within a detailed Derogation Funding Statement (**B2.10 RP Volume B2 Chapter 10 Without Prejudice Derogation**

Funding Statement (APP-202)). This statement is supplemental to the Funding Statement (E1.1 CA Volume E1.1 Funding Statement (APP-224)) submitted as part of the suite of Application documents. The Funding Statement(s) outline the overall project cost based on the capital expenditure and operational expenditure assumptions in the "Review of Renewable Electricity Generation Cost and Technical Assumptions" (DECC 2016). The Funding Statement(s) also detail the corporate structure and a robust explanation to allow the SoS to conclude that the necessary funding to deliver the compensation measure can be secured.

Conclusion

10

10.1.1.1 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 design and implementation of the bycatch reduction project and ensure the compensation measure can be readily achieved and secured.

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11