Morecambe Offshore Windfarm: Generation Assets

Examination Documents

Volume 9

Outline Compensation Implementation and Monitoring Plan – Red-throated diver

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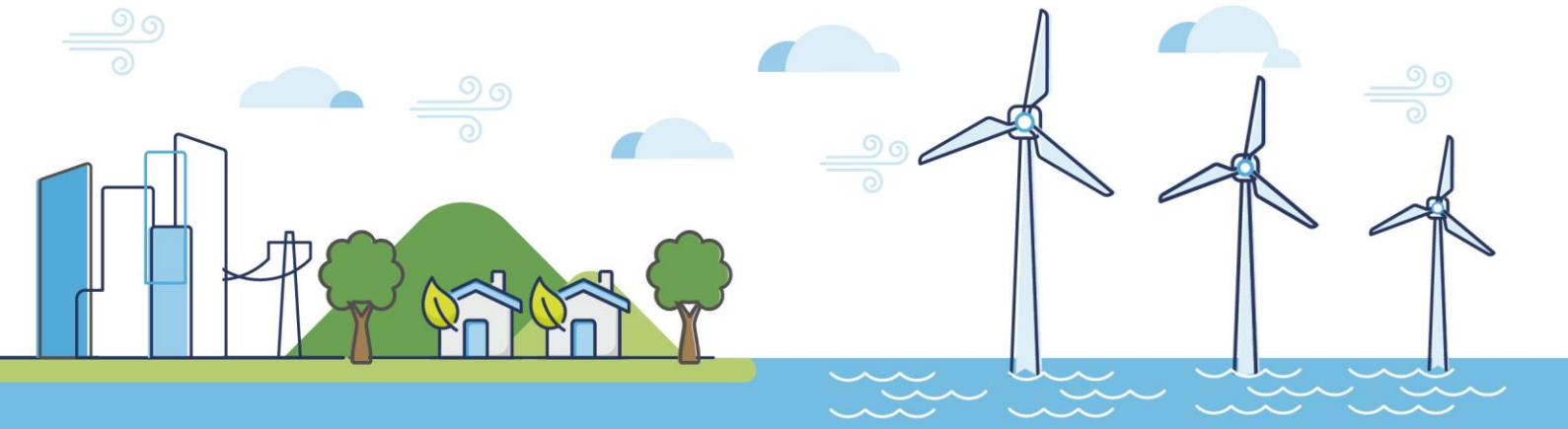

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Contents

Glossary of Acronyms

AfL	Agreement for Lease
AEoI	Adverse effect on integrity
CIMP	Outline Compensation Implementation and Monitoring Plan
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ESO	Electricity System Operator
ExA	Examining Authority
HNDR	Holistic Network Design Review
HRA	Habitats Regulations Assessment
MRF	Marine Recovery Fund
NE	Natural England
OSP	Offshore Substation Platform
OTNR	Offshore Transmission Network Review
PINS	Planning Inspectorate
RIAA	Report to Inform Appropriate Assessment
RTD	Red-throated diver
RTDCSG	Red-throated diver Compensation Steering Group
SoS	Secretary of State
SPA	Special Protected Area
UK	United Kingdom
WTG	Wind Turbine Generator

Glossary of Units

cm	centimetre
GW	Gigawatt

Glossary of Terminology

Applicant	Morecambe Offshore Windfarm Ltd
Application	This refers to the Applicant's application for a Development Consent Order (DCO). An application consists of a series of documents and plans which are published on the Planning Inspectorate's (PINS) website.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
Inter-array cables	Cables which link the WTGs to each other and the OSP(s).
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The transmission assets for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes OSP(s)[1], interconnector cables, Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV cables and associated grid connection infrastructure such as circuit breaker infrastructure. Also referred to in this chapter as the Transmission Assets, for ease of reading.
Offshore substation platform(s)	A fixed structure located within the windfarm site, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable form for export to shore.
Wind turbine generator (WTG)	A fixed structure located within the windfarm site that converts the kinetic energy of wind into electrical energy.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables will be present.

[1] At the time of writing the Environmental Statement, a decision had been taken that the offshore substation platforms (OSPs) would remain solely within the Generation Assets application and would not be included within the Development Consent Order (DCO) application for the Transmission Assets. This decision post-dated the Preliminary Environmental Information Report (PEIR) that was prepared for the Transmission Assets. The OSPs are still included in the description of the Transmission Assets for the purposes of this document as the in-combination effects assessment carried out in respect of the Generation/Transmission Assets is based on the information available from the Transmission Assets PEIR and associated Habitats Regulation documentation.

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1 Introduction

1.1 Project Background

1. Morecambe Offshore Windfarm Ltd ('the Applicant') is applying for a Development Consent Order (DCO) for the Morecambe Offshore Windfarm Generation Assets (hereafter 'the Project'). The Project was one of six projects selected by The Crown Estate in its Offshore Wind Leasing Round 4 in 2021. The Agreement for Lease (AfL) for the Project was received in 2023.

2. The Project includes the Generation Assets to be located within the offshore windfarm site (wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSPs).

3. A separate DCO consent for the Transmission Assets associated with the Morecambe Offshore Windfarm and the Morgan Offshore Wind Project (another proposed Round 4 windfarm to be located in the Irish Sea) would be sought, as explained below.

4. Both the Morecambe Offshore Windfarm and the Morgan Offshore Wind Project have been scoped into the Pathways to 2030 workstream, under the Offshore Transmission Network Review (OTNR). Under the OTNR, the National Grid Electricity System Operator (ESO) is responsible for conducting a Holistic Network Design Review (HNDR) to assess options to improve the coordination of offshore wind generation connections and transmission networks. In July 2022, the United Kingdom (UK) Government published the Pathway to 2030 Holistic Network Design documents, which set out the approach to connecting 50 Gigawatts (GW) of offshore wind to the UK electricity network (National Grid ESO, 2022). The output of this process concluded that the Morecambe Offshore Windfarm and the Morgan Offshore Wind Project would both connect to the National Grid at Penwortham in Lancashire, and as such the developers are working collaboratively.

5. Consequently, effects from the Transmission Assets of the Morecambe Offshore Windfarm and the Morgan Offshore Wind Project have been screened and assessed separately, as part of a joint Transmission Assets Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) process and subsequent DCO application, to be submitted by Morecambe Offshore Windfarm Ltd and Morgan Offshore Wind Limited (the latter being the developer of the Morgan Offshore Wind Project). The separation of assessment has not impacted the conclusions drawn in the Project Report to Inform the Appropriate Assessment (RIAA) (REP1-012).

1.2 Purpose of this document

6. This document sets out the outline for a Red-Throated Diver (RTD) Compensation Implementation and Monitoring Plan (CIMP). The proposed compensation measures have been developed to demonstrate that suitable compensation could be provided in the event that the SoS considers that an adverse effect on integrity (AEoI) cannot be ruled out for the RTD feature of Liverpool Bay SPA. It is the Applicant's position that AEoI can be ruled out for this feature, and therefore the compensation proposals are presented without prejudice to this position. It is expected that the RTD CIMP will be further developed by the Applicant, in consultation with the proposed red-throated diver Compensation Steering Group (RTDCSG), should consent for the Project be granted and compensation for impacts on RTDs be required.

7. The detail in this outline CIMP has been developed in accordance with one of the compensatory measures described in the Habitats Regulations Assessment Without Prejudice Derogation Case (Document Reference 9.37). The Habitats Regulations Assessment Without Prejudice Derogation Case provides detailed evidence supporting the potential compensation measures for RTD.

8. The final CIMP would include all details, where relevant for each measure (as outlined in **Section 4**) to be taken forward, of the:

   - Scale and location
   - Design
   - Delivery process
   - Delivery timeframe
   - Monitoring and adaptive management
   - Reporting requirements

2 Background

9. The Report to Inform an Appropriate Assessment (RIAA; Document Reference 4.9) for the Project concluded that there would be no risk of an AEoI for the RTD feature of Liverpool Bay SPA. This is because the Applicant considers that the predicted displacement effect would affect a very small number of birds within an area of low importance for this species. However, Natural England (NE), in its representations to the Examination for the Project, does not agree with the Applicant's position on this matter. While NE agrees that there would be no AEoI as a result of Project alone effects, it considers that the Project would contribute to in-combination effects, for which AEoI cannot be ruled out.

10. In light of NE's position, the Examining Authority (ExA) requested that the Applicant prepare a without prejudice derogation case and compensation proposals for this feature (PD-011). This was submitted to the Examination by the Applicant at Deadline 3, and updated at Deadline 5 (Document Reference 9.37). This outline CIMP provides further detail of the proposed delivery and monitoring of compensation measures.

11. This section will be updated to provide further context to the CIMP, confirming the reason for its need, its aims and objectives, and the latest project status.

3 Consultation

12. **Table 3.1** presents a brief summary of relevant consultation undertaken to inform the development of the compensation measures to date.

13. Further updates to this section will summarise all relevant consultation that has taken place through the RTDCSG in the development of the CIMP. It will capture any key decisions, agreements, and where relevant any outstanding issues under discussion (with clarity as to the steps necessary to resolve any such matters). Ongoing engagement, for example to provide updates on monitoring (post- discharge of the CIMP) will be outlined here.

Table 3.1 Summary of Consultation

Consultee	Timeframe/ Date(s)	Summary of consultation response
NE	November 2024 – March 2025	Discussions around the development of the compensation case for red-throated diver, both in meetings with the Applicant and in NE's formal submission to the Examination. NE's has confirmed broad support for the compensation proposals, subject to confirmation of further details, including specific details on the location of measures and success criteria (REP5-082).
RSPB	10 December 2024	Discussions around the development of the compensation case for red-throated diver. It is noted that in the final Statement of Common Ground with the Applicant (Document Reference 9.1), RSPB has confirmed that it does not have capacity to provide a formal position on the presented derogation case and compensation proposals within the examination timescale.
Defra	17 January 2025	Discussions around the development of the compensation case for red-throated diver following requirement at ExQ1 to provide a derogation case.
NatureScot	18 March 2025	Discussions around the development of the compensation case for red-throated diver
Landowners	November 2024 – March 2025	Introductory emails, phone conversations and Teams meetings with landowners including discussions on ecological criteria. Outlining compensation measure requirements, assessing suitability of landholdings for red-throated diver breeding habitat, discussion on peatland restoration schemes and securing letters of support for further development of the measures.

4 Enhance breeding habitat (nesting rafts and/or habitat management)

4.1 Scale and Location of Compensation

14. It is proposed that the provision of nesting rafts would be the primary compensation measure. A total of 20 compensation lochs (i.e. 20 new rafts) are proposed, together with 20 control sites against which increase in breeding success can be monitored. NE has confirmed that it considers that the proposed scale of compensation is appropriate, noting that there is *'no measurable direct link between the potential effect (habitat loss/degradation) and the proposed scale of compensation (increased productivity)'*.

15. Habitat management is proposed as a secondary compensation measure, where it can be demonstrated that this would support the primary measure. The scale of the habitat management (if progressed) will be linked to the final raft locations and requirements at each lochan and whether it is a requirement by the Secretary of State (SoS).

16. The final locations of the primary compensation measure have not yet been finalised, but in-principle agreements with a number of landowners have been secured, sufficient to deliver the required 20 compensation and 20 control sites. These locations of the lochs in Argyll and/or Highland regions of Scotland have been selected through a screening exercise to identify ecologically suitable locations, as documented in the without prejudice derogation case (Document Reference 9.37). The specific landowners in these areas are all located in areas known to support breeding RTDs, but outside of SPAs designated for this species. Further details of landowners where agreement has been secured is provided in the without prejudice derogation case (Document Reference 9.37), noting that this information has been redacted due to ecological and commercial sensitivity, but has been made available on a confidential basis to statutory consultees.

17. Updates to this section will include further detail on the scale of compensation proposed to be provided, and how this relates to the consent decision made by the Secretary of State. This section will also detail the specific location(s) at which the compensation will be delivered and the suitability of the identified site(s) to deliver the compensation measure. This section will also include further detailed analysis of any risk of unintended consequences (e.g. drawing divers out of Special Protected Areas (SPAs) into areas where they are not protected), predation risk, particularly regarding American mink in mainland locations, and potential negative consequences of inappropriate habitat management.

18. If the Applicant has elected to pay a contribution to the Marine Recovery Fund (MRF) or equivalent fund, then this section shall include the sum of the contribution as agreed between the Applicant and Defra or other body responsible for the operation of the MRF in consultation with the RTDCSG.

4.2 Design

19. The RTD compensation measures would comprise the following elements:

- Pre-implementation baseline monitoring to confirm the current status (productivity) of RTD at the compensation sites.
- Implementation and maintenance of the compensation measures (nesting rafts and potentially habitat management).
- Monitoring to inform delivery, establish the success of compensation and, if required, identify adaptive management measures.

20. Information on the proposed measures is provided below. Further updates to this section will be undertaken as required, taking into account any updates to the evidence base provided in support of the proposed compensatory measures (Document Reference 9.37) and engagement with the RTDCSG.

4.2.1 Pre-implementation baseline monitoring

21. Red-throated diver is listed under Schedule 1 of the Wildlife and Countryside Act 1981, meaning that it is protected against intentional disturbance while building a nest, or in, on or near a nest containing eggs or young; or to disturb dependent young even if not in the nest. A Licence is therefore required to:

- Disturb a Schedule 1 species during the breeding season to monitor breeding performance and ring adults or young; and/or
- Visit the nest of a Schedule 1 species during the breeding season (to record the contents only).

22. All survey and monitoring work would therefore be undertaken by suitably experienced surveyors holding the required survey Licence.

23. Monitoring would be designed to show that productivity at the compensation sites is increased. The pre-construction baseline and subsequent monitoring visits would be undertaken using the same methodology to enable change in productivity to be measured. As set out in the RTD derogation case document (Document Reference 9.37), an increase of approximately 0.4 fledged chicks per raft would be predicted for each occupied nesting raft. Comparable monitoring of the raft and control sites (20 of each) would be undertaken to demonstrate the productivity increase. For lochs where rafts are installed, checks of the waterbody edge for evidence of breeding would also be required. Monitoring would be undertaken as follows:

- At least two visits per season would be undertaken in early May and late August. The number of visits would be minimised to avoid unnecessary disturbance.
- Monitoring methods would seek to minimise disturbance as far as possible. This would be achieved through:
  - Where possible, sites would be checked at a distance with a telescope, and only approached when no evidence of nesting divers could be observed.
  - Use of remote sensing methods (e.g. temperature probes (to determine when an adult bird is sitting) and cameras) where possible.
  - Minimising the number of visits.
- For raft or island nests, a boat to visit the nest may be required (e.g. using a small inflatable that can be carried to site). No more than two visits would be made to the nest during the breeding season, to install remote sensors and retrieve them at the end of the season. All other monitoring would be from a distance using telescopes and binoculars.
- For each nesting attempt, the contents of the nest would be recorded, e.g. no eggs, number of eggs, any remains of egg shell including whether the shell suggests a chick hatched or the egg was predated. Any eggs found in nests would be floated in water to determine the stage of embryo development (O'Brien et al., 2018; van Päässen et al., 1984). This information would help predict when eggs can be expected to hatch and when to return to check on breeding success, while avoiding disturbing adults with newly hatched young.
- During the course of the monitoring, the following would be recorded:
  1) Eggs disappeared, presumed predated;
  2) Egg shell present showing evidence of predation;
  3) Egg shell present showing evidence of hatching;
  4) Whole eggs present but cold, presumed abandonment of the nesting attempt by parents;
  5) No chicks seen on any visit;
  6) Small chicks seen but not present at a later visit; and
  7) Large chicks (3/4 the size of adult) present
- Productivity would be recorded as the total number of large chicks (i.e. (7) above), divided by the total number of nests with eggs.
- Red-throated divers sometimes move their flightless chicks over land from the waterbody on which they fledged to a nearby, often larger, waterbody (Hulka, 2010) so neighbouring waterbodies (within 100m) would also be checked when monitoring for diver chicks, subject to landowner access agreement.
- Red-throated divers will re-lay if a nesting attempt fails early in the breeding season. Following nest failures, the waterbody and nearby waterbodies would be visited again to look for any re-lay nests. The

same methods for monitoring productivity would be used on any re-lay nesting attempts, as for first attempts.
- Other relevant information would also be recorded, such as weather, and evidence of the presence of predators.

4.2.2 Nesting rafts and habitat management

24. The proposed primary compensation measure would be to increase red-throated diver productivity through provision of artificial nesting rafts. The rafts would be installed on Scottish waterbodies known to support breeding red-throated diver, and potentially also suitable freshwater lochs in close proximity to known breeding locations. This approach has been used successfully in Scotland, Scandinavia and North America, and has been demonstrated to achieve both an increase in nesting pairs and a measurable productivity increase.

25. The raft design would be based on the approach described by Nummi *et al.* (2013):

- Each raft would be approximately 1m x 1m in size, comprising floats (e.g. plastic water containers) covered with vegetated peat taken from the edge of the loch. Vegetation on the raft would be expected to continue to grow.
- The top of the raft would be approximately 15cm above water level.
- The raft would be anchored to the bottom of the waterbody (e.g. with a rope attached to a heavy rock).
- The raft would be located away from the shore (ideally >25m) to minimise risk of disturbance.
- Rafts would be sited, as far as possible, in areas sheltered from the prevailing wind and also away from potential disturbance sources.

26. Annual maintenance checks of the rafts would be undertaken prior to the commencement of each breeding season, i.e. before the end of March each year. Any required repairs or replacement would be implemented as required.

27. Habitat management will also be considered as a secondary measure (i.e. to benefit lochs where rafts are being deployed) where this has been identified as a potential limiting factor. This may include erosion repair, where this is impacting water levels within the loch, and measures to discourage human disturbance, such as re-routeing paths away from the loch edge.

28. Further updates to this section will identify any additional details for the design for the construction of nesting rafts/habitat management on a site-by-site basis (dependent on the sites identified). The evidence base provided in support of the proposed compensatory measures (Habitats Regulations

Assessment Without Prejudice Derogation Case (Document Reference 9.37)) and engagement with the RTDCSG will be important in informing the specific design aspects of this measure.

4.3 Delivery Process

29. The Applicant proposes that rafts would be installed prior to installation of the WTGs at the Project site. Red-throated divers would be expected to start using rafts the following summer, and fledglings from these sites would contribute to the National Site Network (NSN) in their first winter (i.e. within 12 months of raft installation). Measures would be in place so that fledglings from the rafts were capable of contributing to the NSN prior to the start of operation and delivered for the period where WTGs remain *in situ* at the Project site, together with monitoring the effectiveness of the measure as agreed by the RTD CSG.

30. All consents, commercial agreements and other required approvals would be put in place prior to implementation and maintained for lifetime of the compensation measures, as required.

31. Further updates to this section will identify further details of the delivery process, including a timetable for delivery, nature and status of all consents, commercial agreements (including land access rights) and other relevant approvals that may be necessary for the compensation measure and a programme for any outstanding consents. The evidence base contained within the Habitats Regulations Assessment Without Prejudice Derogation Case (Document Reference 9.37) will help inform these aspects.

4.4 Monitoring and Adaptive Management

4.4.1 Aims and objectives

32. Monitoring would be undertaken to establish the success of the compensation measures, i.e. to confirm that rafts are utilised by RTDs and that there is an increase in the productivity an existing nesting lochs where rafts are provided.

4.4.2 Timing

33. Monitoring would be undertaken for a minimum of three years following the implementation of the compensation measures. The requirement and frequency of monitoring after this period would be determined in consultation with the RTDCSG, depending on the success of the measures at that time.

4.4.3 Methodology

34. Monitoring would be undertaken using the same methodology as the pre-compensation baseline monitoring, as set out in **Section 4.2.1**.

4.4.4 Adaptive Management

35. In the event that measurable increase in red-throated diver productivity (when compared to control sites) was not demonstrated at the compensation sites, adaptive management measures would be introduced. This would be undertaken as advised by, and in agreement with, the RTDCSG. Annual monitoring reports would be presented to the RTDCSG (see below), and if no increase in productivity was determined after three years, this would be discussed with the RTDCSG and any additional measures agreed and implemented. In establishing the need for adaptive measures, it would be important to understand the likely causes, and also any wider factors, outside of the control of the Project, that may be impacting the success.

36. In the event that an increase in productivity, when compared to the control sites, was established, the RTDSCG would also review the ongoing monitoring requirements, noting the need to minimise disturbance at the nesting sites as far as possible. Once the success of the compensation was established, it would be expected that the extent of monitoring could be reduced.

37. Subject to discussion and agreement with the RTDCSG, potential adaptive management measures may include:

- Provision of 'roofs' (e.g. comprising camouflage netting over wire mesh or similar) on rafts to reduce predation (e.g. by great skua, gulls or corvids) where this is demonstrated to be an issue. In North America, rafts with roofs have increased great-northern diver productivity (de Sorbo *et al.* 2008). The 'roofs' would need to be carefully designed to ensure that they did not risk wind damage, e.g. through 'roof' design and placement of the raft in a sheltered location, as appropriate.
- Additional management/enhancement of vegetation on rafts to ensure that they provide suitable cover for RTDs, e.g. through development of *Carex* (sedge) species <30cm.
- Targeted predator monitoring and management (where this is not already in place), for species such as American mink.
- Monitoring and management of other problem species, particularly Canada goose, where these are thought to be present a competition risk on the rafts.
- Habitat management measures, for example to maintain water levels within the nesting lochs.

38. Further updates to this section will identify changes or additions to the monitoring and adaptive management principles and processes that will have been agreed with the RTDCSG, including survey methods; success criteria; adaptive management measures; timescales for the monitoring and monitoring reports to be delivered; and details of the mechanism to determine the need for any alternative compensation measures and/or implementation of adaptive management measures. It will be developed taking into account the evidence base that has been provided in support of the proposed compensation measures set out within the Habitats Regulations Assessment Without Prejudice Derogation Case (Document Reference 9.37). Following discharge of the RTD CIMP, the RTDCSG will be engaged in reviewing on-going monitoring and implementing adaptive management if required as outlined in the **Section 3** (Consultation) above.

4.5 Reporting

39. Annual reporting of management and monitoring results (in years when monitoring is undertaken) would be produced and provided to the RTDCSG at the end of each breeding season. The report would set out the success of the compensation measures against project objectives. This would be followed by a meeting of the RTDCSG where the results would be discussed and comments on the annual report provided. The RTDCSG would also review any requirement for adaptive management. The final report would be submitted to SoS to enable sign-off, and to enable any adaptive management measures to be implemented for the following breeding season.

40. Further updates to this section will set out and changes to the reporting requirements associated with the monitoring and adaptive management. In doing so, it will confirm the necessary changes to objectives and timescales for the reporting.

5 References

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