XLINKS MOROCCO-UK POWER PROJECT

Preliminary Environmental Information Report

Volume 3, Chapter 9: Offshore Ornithology

FOR ISSUE
April 2024

xlinks.co

Contents

Tables

Figures (See Volume 3, Figures)

Figure Number	Figure Title
Figure 9.1	Offshore Ornithology Study Area

Glossary

Term	Meaning
Ramsar Site	Wetlands of international importance that have been designated under the criteria of the Ramsar Convention. In combination with Special Protection Areas and Special Areas of Conservation, these sites contribute to the national site network.
Site of Special Scientific Interest	A site designation specified and protected in the Wildlife and Countryside Act 1981. These sites are of particular scientific interest due to important biological (e.g. a rare species of fauna or flora), geological or physiological features.
Special Protection Areas (SPA)	A site designation specified in the Conservation of Habitats and Species Regulations 2017, classified for rare and vulnerable birds, and for regularly occurring migratory species. Special Protection Areas contribute to the national site network.
Transboundary effects	Effects from a project within one state that affect the environment of another state(s).

Acronym	Meaning
BoCC	Birds of Conservation Concern
CLV	Cable Lay Vessel
EcIA	Ecological Impact Assessment
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
JNCC	Joint Nature Conservation Committee
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NNR	National Nature Reserve
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UK	United Kingdom
ZOI	Zone of Influence

Units

Units	Meaning
km	Kilometre
m	Metre
nm	Nautical mile

9 OFFSHORE ORNITHOLOGY

9.1 Introduction

9.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary findings of the Environmental Impact Assessment (EIA) work undertaken to date for the United Kingdom (UK) elements of the Xlinks Morocco-UK Power Project. For ease of reference, the UK elements of the Xlinks Morocco-UK Power Project are referred to in this chapter as the 'Proposed Development'.

9.1.2 This chapter considers the potential impacts and likely significant effects of the Proposed Development on offshore ornithology during the construction, operation, and decommissioning phases. Specifically, it relates to the offshore elements of the Proposed Development seaward of Mean High Water Springs (MHWS).

9.1.3 In particular, this PEIR chapter:

- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation undertaken to date;
- presents the potential environmental impacts and effects on all aspects of offshore ornithology arising from the Proposed Development, based on the information gathered and the analysis and assessments undertaken to date;
- identifies any assumptions and limitations encountered in compiling the environmental information; and
- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

9.1.4 Impacts to offshore ornithology in the UK were proposed to be scoped out of the EIA process at the Scoping stage (Scoping Report submitted to the Planning Inspectorate in January 2024). The Scoping assessment considered the offshore ornithology receptors likely to be present in the study area and the potential impacts due to the Proposed Development activities during construction, operation and decommissioning. It was concluded, with high confidence, that potential impacts to relevant receptors would be of negligible significance and as such, offshore ornithology was proposed to be scoped out of further assessment.

9.1.5 The Planning Inspectorate provided a Scoping Opinion on 07 March 2024. Responses received from Natural England agreed with the scoping out of impacts on offshore ornithology from the EIA process. However, responses received from the Joint Nature Conservation Committee (JNCC) advised that offshore ornithology should be scoped into the EIA process and included as an aspect chapter within the PEIR and Environmental Statement. After reviewing these responses and JNCC's justifications included in the Scoping Opinion, this chapter was subsequently included within the PEIR to ensure a full audit trail of reporting on the potential impacts and likely significant effects of the Proposed Development on offshore ornithology.

9.1.6 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR and any refinements in design will be reviewed and taken into account, where appropriate, in preparation of the Environmental Statement that will accompany the application to the Planning Inspectorate for development consent.

9.2 Legislative and Policy Context

Legislation

9.2.1 The following key legislation and policy documents specific to offshore ornithology have been considered within the assessment process:

- Convention on the Conservation of European Wildlife and Natural Habitats (1979);
- Energy Act 2023 (2023);
- European Commission Directive 2009/147/EC (codified version of 79/409/EC) on the Conservation of Wild Birds (the 'Birds Directive') (2009);
- EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (known as the 'Habitats Directive') (1992);
- Offshore Marine Conservation (Natural Habitats, &c.) Regulations (the 'Offshore Regulations') (2017);
- Ramsar Convention on Wetlands of International Importance (1971);
- South West Inshore and South West Offshore Marine Plans (2021);
- The Convention on the Conservation of Migratory Species of Wild Animals (the 'Bonn Convention') (1979);
- The Marine Strategy Regulations (2010);
- The Natural Environment and Rural Communities Act (2006);
- The Wildlife and Countryside Act (as amended) (1981);
- UK Marine Policy Statement (2011); and
- UK Post-2010 Biodiversity Framework (2012).

Planning Policy Context

9.2.2 The Proposed Development will be located within UK inshore waters and the UK EEZ offshore waters - beyond 12 nautical miles (nm) from the English coast (with the onshore infrastructure located wholly within Devon, England). As set out in Volume 1, Chapter 1: Introduction, of the PEIR, the Secretary of State for the Department for Energy Security and Net Zero (DESNZ) has directed that elements of the Proposed Development are to be treated as a development for which development consent is required under the Planning Act 2008, as amended.

National Policy Statements

9.2.3 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to the Proposed Development, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government's policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero 2023a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero 2023b); and

- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2023c).

9.2.4 **Table 9.1** sets out key aspects from the NPSs relevant to the assessment of transboundary ornithology effects.

Table 9.1: Summary of relevant NPS policy

Summary of NPS requirement	How and where considered in the PEIR
NPS EN-1	
The design of energy NSIP proposals will need to consider the movement of mobile/migratory species such as birds, fish and marine and terrestrial mammals and their potential to interact with infrastructure. As energy infrastructure could occur anywhere within England and Wales, both inland and onshore and offshore, the potential to affect mobile and migratory species across the UK and more widely across Europe (transboundary effects) requires consideration, depending on the location of development (paragraph 5.4.22).	Bird species are the subject of this PEIR chapter. The baseline for these species in the study area is detailed in **section9.5** of this chapter**.** The assessment of impacts to these species is set out in **section 9.8** to **section 9.10** of this chapter. Potential transboundary effects are considered in **section 9.12.**

North Devon Biosphere Reserve

9.2.5 The Proposed Development is located within the North Devon Biosphere Reserve, which is recognised under UNESCO's Man and the Biosphere (MAB) Programme and designated as an area for testing and demonstrating sustainable development on a sub-regional scale.

9.2.6 The North Devon Biosphere Reserve consists of three zones; a core zone centred around Braunton Burrows SAC / SSSI, a buffer zone consisting of the Taw Torridge Estuary (as far as Barnstaple and Bideford), and a transition zone formed by the catchment area of the rivers and streams that drain to the North Coast of Devon in addition to an area of sea as far out as Lundy.

9.2.7 The Biosphere Reserve is overseen by the North Devon Biosphere Reserve Partnership, which is a collaboration of 26 partnership organisations who work to deliver sustainable development through direct action, through advocacy and providing advice. The non-statutory 'North Devon Biosphere Reserve Strategy for Sustainable Development 2014 to 2024' (NDB undated) provides a context for stakeholders to deliver programmes and plans in support of the sustainable development of the Biosphere Reserve.

9.2.8 Within the North Devon Biosphere Reserve, non-statutory programmes and plans relevant to offshore ornithology include:

- Marine wildlife watching code of conduct
- North Devon Marine Natural Capital Plan
- North Devon Marine Nature Recovery Plan 2022-2027

9.2.9 The extent to which the Proposed Development impacts on the North Devon Biosphere Reserve and its relevant programmes / plans has been considered in this offshore ornithology chapter, and consultation will take place with the North Devon Biosphere Reserve Partnership ahead of ES stage to further characterise any potential impacts. **Table 9.2** presents a summary of the specific policies set out in the North Devon Marine Natural Capital plan (North Devon UNESCO

Biosphere Reserve, 2020) and the Strategy for Sustainable Development (NDB undated) relevant to this chapter.

Table 9.2: Summary of North Devon Biosphere Marine Natural Capital Plan and Strategy for Sustainable Development policies relevant to this chapter

Policy	Description	How and where considered in the PEIR
Marine Natural Capital Plan PL08: *Set management priorities that will rapidly enable 'recovery' of estuarine and coastal intertidal habitats within MPAs, where this conservation objective exists.*	*In the North Devon Marine Natural Capital Plan area these habitats, particularly saltmarsh as well as shallow subtidal reefs and sediments, support multiple ecosystem benefits including food provision, sea defence, healthy climate, and, tourism and recreation. PL08 recognises the importance of these habitats and focuses management measures towards delivering multiple ecosystem service benefits.*	A number of offshore receptors have been identified which may utlilise these habitats for foraging. Impacts on these receptors have been assessed in sections **9.8**, **9.9** and **9.10**
Strategy for Sustainable Development ENV3	*Ensure that development should not be permitted that removes critical natural sites and land-take by development is subjected to a programme that ensures no net loss of ecosystem services and biodiversity through on site design and offsite offsetting.*	Impacts on offshore ornithology receptors have been assessed in sections **9.8**, **9.9** and **9.10**

9.3 Consultation and Engagement

9.3.1 In January 2024, the Applicant submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects from the Proposed Development. It also described those topics or sub-topics (including offshore ornithology), which are proposed to be scoped out of the EIA process and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these areas.

9.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State for Energy Security and Net Zero) provided a Scoping Opinion on 07 March 2024. Key issues raised during the scoping process specific to offshore ornithology are listed in **Table 9.3**, together with details of how these issues have been addressed within the PEIR.

Table 9.3: Summary of Scoping Responses

Comment	How and where considered in the PEIR
Planning Inspectorate	
Several aspect chapters in the Scoping Report refer to fixed distance study areas with no explanation as	The offshore ornithology study area is defined in **section 9.4**.

Comment	How and where considered in the PEIR
to why these have been selected. The ES should ensure the study area for each aspect reflects the Proposed Development's ZoI and the impact assessment should be based on the ZoI from the Proposed Development with reference to potential effect pathways. Clear justification should be provided to support any distances applied.	
The Inspectorate acknowledges that data and knowledge regarding the baseline environment exists for the offshore area in which the Proposed Development would be located. The Inspectorate understands the benefits of utilising this information to supplement site-specific survey data but advises that suitable care should be taken to ensure that the information in the ES remains representative and fit for purpose. The Applicant should make effort to agree the suitability of information used for the assessments in the ES with relevant consultation bodies.	There were no comments relating to the baseline data used for offshore ornithology to date by statutory consultees. It is not proposed that any site-specific surveys are undertaken to inform the offshore ornithology baseline. The sources used are outlined within **Table 9.7**, which are considered sufficiently robust for EIA purposes.
It is noted that the Scoping Report includes consideration of potential transboundary effects in relation to Offshore Ornithology. The Inspectorate recommends that the ES should identify whether the Proposed Development has the potential for significant transboundary effects, and if so, what these are, and which EEA States would be affected. The Inspectorate will undertake a transboundary screening on behalf of the SoS in due course.	A screening of transboundary effects has been undertaken in Volume 1, Appendix 5.2 and discussed further in **section 9.12** of this chapter.
The Scoping Report states that impacts on fish and shellfish receptors would affect prey availability for some marine mammal and bird receptors, but the scale of this inter-related effect has already been considered and scoped out at Section 8.5.	Impacts of prey availability on avian receptors is discussed in **sections 9.7.3** and **9.12**. It is noted that the Planning Inspectorate has agreed in their scoping response that "*direct injury/mortality of fish and shellfish from vessel activities*" can be scoped out of the assessment.
The ES should set out the methodologies used to explain any departure from the proposed approach where professional judgement is applied. Outputs from other assessments should be clearly explained where these have been applied.	Noted. The methodology used for offshore ornithology within the PEIR is outlined in **section 9.4**.
The Scoping Report acknowledges that the study area supports foraging bird species, including those associated with European sites, and that the Celtic Sea supports large numbers of birds. While the Scoping Report concludes that significant effects are unlikely, it also relies on a number of measures such as that to be included within a VMP to avoid likely significant effects and makes the assumption that the number of vessels present would only be present for a short period of time. The Inspectorate notes that JNCC concurs with this position. While NE has confirmed that it considers this matter can be scoped out of further assessment, this is on the basis that seasonal restrictions are applied when working closest to Lundy (ie in the months approximately May to August, when seabird breeding and	Noted. Potential restrictions on working near Lundy and the adoption of a Vessel Management Plan are discussed in **section 9.7**.

Comment	How and where considered in the PEIR
foraging will be at its peak), and restrictions on vessel speeds around any rafts of birds encountered on the sea surface, need to be secured.	
In the absence of information such as evidence demonstrating clear agreement with relevant statutory bodies, the Inspectorate is not in a position to agree to scope potential effects on offshore ornithology from the assessment. Accordingly, the ES should include an assessment of this matter, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of a likely significant effect.	Noted and the assessment of potential offshore ornithology effects is now presented as a full PEIR chapter for avoidance of any doubt. Additional consultations undertaken with statutory bodies to discuss specific scoping opinion comments.
In the absence of the findings of the fish assessment and information demonstrating clear agreement with relevant statutory bodies, the Inspectorate is not able to agree to scope indirect effects on offshore ornithology (due to potential underwater noise or the generation of suspended sediments that may alter the distribution, physiology or behaviour of prey species) out of further assessment at this stage. The ES should include an assessment of indirect impacts to offshore ornithology receptors as a result of impacts to prey species, where likely significant effects could occur.	The Planning Inspectorate has agreed in their scoping response that "*direct injury/mortality of fish and shellfish from vessel activities*" can be scoped out of the assessment. However, as there are other pathways for effects on fish and shellfish prey which have been scoped into the assessment, this is discussed further within **sections 9.7.3** and **9.12**.
Based on the information provided on the proposed mitigation and control measures, the Inspectorate agrees that significant effects from accidental release of pollution on offshore ornithology receptors during all project phases are unlikely. The ES should provide full details of the proposed mitigation measures for all project phases and describe how they are to be secured.	Noted. Mitigation measures proposed as part of the Proposed Development are outlined in **section 9.7** of this chapter, which includes adherence to standard pollution prevention measures via a Construction Environmental Management Plan (CEMP) (an outline Offshore CEMP is provided as PEIR Volume 1, Appendix 3.3, which will continue to be developed and submitted as part of the DCO application).
JNCC	
JNCC do not agree that offshore ornithology is scoped out of an Environmental Impact Assessment. We agree with the method used to assess impacts to offshore ornithology as outlined in Appendix C, and we agree that the impacts from the works are likely to be small. However, this assessment of potential impacts to offshore ornithology should be presented within an Environmental Impact Assessment, not at the scoping stage.	Noted and potential effects considered within PEIR. Further consultations undertaken with the JNCC prior to PEIR allowing scoping opinion comments to be discussed.
In paragraph 11.2.6 the Applicant states that "Although it is likely that several seabird species will forage within the study area, the potential for direct impacts during construction, operation and maintenance, and decommissioning are considered (with high confidence) to be of negligible significance, and this is scoped out of further consideration in the EIA. This is consistent for example, with the approach that is used to assess the impact arising from export cables associated with offshore wind farms." We do not agree that the scoping out of offshore ornithology impacts is	Noted. The offshore ornithology assessment is presented as a full PEIR assessment (this chapter) i.e. it is now scoped in for completeness.

Comment	How and where considered in the PEIR
consistent with export cables associated with offshore wind farms, or that this is a rationale for scoping out offshore ornithology for this project. We advise that the assessment of potential impacts to offshore ornithology should be carried out within the Environmental Impact Assessment, not at the scoping stage".	
"Although large numbers of birds are known to be present in the Celtic Sea, particularly during the breeding season, none of the data sources consulted indicate that the study area is of particular importance for any species listed in comparison to the surrounding habitat outside the study area" We disagree with this statement as the presence of large numbers of birds would suggest that the area is important for seabirds".	As stated in **section 9.5**, it is acknowledged that the Celtic Sea (where the Offshore Cable Corridor is located) supports large numbers of birds, particularly during the breeding season. However, the desk study does not indicate that the study area is of greater importance than the surrounding habitats. JNCC have been consulted further to discuss scoping opinion responses (**Table 9.4**). JNCC agree that the Offshore Cable Corridor does not constitute an area of greater importance than the surrounding / wider Celtic sea.
Table 5 of Appendix C states "Potential impacts would be highly localised and for a limited, short-term duration and only last as long as vessels are present within c.2 km of any area". Yet it is also stated that installation vessels and up to 20 guard vessels will be present 24/7 for 9 months in 2028 and the same in 2030. Therefore, multiple vessels will be present constantly for two whole breeding season and parts of two non-breeding seasons".	Although installation and guard vessels will be present for up to 9 months, this would be transient, and vessels would be present within a discrete area for a very short duration. Works will be carried out linearly, with vessels moving along the 370 km route during the proposed 9-month duration. The proposed cable laying vessel speed is estimated at 500 m per hour, while the protection vessels present would move at a slower speed of approximately 100 m per hour. JNCC consulted further to discuss scoping opinion responses. JNCC acknowledges the transient nature of any vessel disturbance. JNCC suggested that indicative estimates of the area(s) over which vessels may be operating would be useful in considering any potential disturbance effects. Area estimates to be developed and presented at ES stage.
We agree with the method used to assess impacts to offshore ornithology as presented in Appendix C, and the outcome of the assessment which suggest that impacts from the works are likely to be small. However, this assessment of potential impacts to offshore ornithology should be presented within an Environmental Impact Assessment, not at the scoping stage.	Noted. JNCC have been consulted further to discuss scoping opinion responses. JNCC reiterated that EIA methods used (for e.g. describing magnitude) are appropriate and welcomed the inclusion of offshore ornithology as a full EIA chapter.
Natural England	
The development site is within or may impact on the following Sites of Special Scientific Interest: • Mermaid's Pool to Rowden Gut Site of Special Scientific Interest (SSSI) • Taw Torridge Estuary SSSI • Lundy SSSI	Noted. Potential effects on Lundy SSSI are discussed in **section 9.7.3**.

Comment	How and where considered in the PEIR
The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.	
Natural England agree with the scoping out of impacts on offshore ornithology to this subsea cable project. However, Natural England would advise the applicant to restrict operations closest to Lundy in the months approximately May to August, when seabird breeding and foraging will be at its peak. Similarly, Natural England advise vessels should avoid fast movement around any rafts of birds encountered on the sea surface.	Noted. Natural England have been consulted further to determine potential mitigation measures which can be implemented closest to Lundy. Natural England have suggested a voluntary buffer restricting vessel operations around Lundy during the breeding season and this will be considered as part of the assessment at ES stage.
An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.	No site-specific surveys are proposed for offshore ornithology as outlined in **section 9.4**. Desk based data sources are outlined within **Table 9.7**, which are considered sufficiently robust for Offshore Ornithology EIA purposes.

9.3.3 In addition to the formal EIA scoping process, informal consultation with key stakeholders has been undertaken.

9.3.4 A summary of the key issues raised during consultation activities undertaken to date is presented in **Table 9.4**, together with how these issues have been considered in the production of this assessment.

Table 9.4: Summary of consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the PEIR chapter
09/01/24	JNCC meeting – Project introduction meeting and early discussions	JNCC confirmed that should offshore ornithology be scoped out, this would need to be supported with a full baseline characterisation and justifications.	This approach was adopted within the detailed Scoping Report discussions regarding offshore ornithology. The offshore ornithology assessment is now presented as this full PEIR chapter.
22/02/24	Natural England – Project introduction meeting and early discussions	No issues raised with respect to offshore ornithology.	n/a
27/03/24	Natural England – Scoping opinion discussions	Natural England proposed mitigation to reduce potential impacts from works on seabirds associated with Lundy SSSI. As noted in **Table 9.3** "*Natural England would advise the applicant to restrict operations closest to Lundy in the months approximately May to August, when seabird breeding and foraging will be at its peak*". During the meeting further information was requested from Natural England regarding the proposed distance from Lundy that works would ideally be restricted within. Natural England have subsequently suggested a voluntary buffer restricting vessel operations around Lundy during the breeding season.	Potential effects on Lundy SSSI are discussed in **section 9.7.3**. Consideration of a buffer zone restricting vessel operations around Lundy, will be considered as part of the assessment at ES stage.
22/04/24	JNCC meeting – Scoping Opinion and methods discussions	Discussed all JNCC scoping opinion responses. JNCC welcomed the presentation of the offshore ornithology impact assessment as a full PEIR chapter. JNCC explained rationale for recommending offshore ornithology is scoped in i.e. to avoid	Offshore ornithology assessment presented as a full PEIR chapter. Area estimates associated with vessel coverage to be developed and presented at ES stage.

Date	Consultee and type of response	Issues raised	How and where considered in the PEIR chapter
		any doubt given a) wider Celtic sea importance to foraging seabirds, and b) potential for large number of potential vessels (albeit transient). Full EIA would allow confirmation of the expectation of no significant impacts, ensuring transparency and an audit trail of decision making. JNCC agreed that the Offshore Cable Corridor does not constitute an area of greater importance than the surrounding / wider Celtic sea. JNCC understands the transient nature of any vessel disturbance associated with the proposed development. JNCC suggested that indicative estimates of the area(s) over which vessels may be operating would be useful in considering any potential disturbance effects. JNCC suggested also that it may be useful to contextualise baseline vessel movements.	Baseline vessel activity is set out in Volume 3, Chapter 5 of this PEIR.

9.4 Methodology

9.4.1 The offshore ornithology assessment has considered the potential impacts of the construction, operation and decommissioning phases of the Proposed Development. The assessment was carried out in accordance with the methodology set out in Volume 1, Chapter 5: EIA Methodology, of the PEIR.

Relevant Guidance

9.4.2 Guidance documents relevant to offshore ornithology that have been used to support the assessment include the following:

- Natural England and JNCC (2022) Nature conservation considerations and environmental best practice for subsea cables for English Inshore and UK offshore waters;
- The Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (as amended);
- Institute of Environmental Management and Assessment (IEMA) (2017) Delivering Proportionate Environmental Impact Assessment (EIA): A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice; and
- Planning Inspectorate (PINS) (2019) - Advice Note Seventeen: Cumulative Effects Assessment.

Scope of the Assessment

9.4.3 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 9.3** and **Table 9.4**. A range of potential impacts on offshore ornithology have been identified, which may occur during the construction, operation and decommissioning phases of the Proposed Development.

9.4.4 Considering the scoping and consultation process, **Table 9.5** summarises the issues considered as part of this assessment.

Table 9.5: Issues considered within this assessment

Activity	Potential effects scoped into the assessment
Construction Phase	
Ground condition surveys, seabed preparation, route clearance, cable lay and burial activities.	Visual and noise disturbance
	Indirect impacts via loss/disturbance to habitats and prey
	Pollution incidents
Operational phase - repair activities	
Repair works (cable cut, recover, and burial activities)	Visual and noise disturbance
	Indirect impacts via loss/disturbance to habitats and prey
	Pollution incidents

Activity	Potential effects scoped into the assessment
Decommissioning phase - cable removal	
Decommissioning activities	Visual and noise disturbance
	Indirect impacts via loss/disturbance to habitats and prey
	Pollution incidents

9.4.5 Activities assessed elsewhere or with no identified pathway for impact propagation have been scoped out of the assessment. A summary of the effects scoped out is presented in **Table 9.6**.

Table 9.6: Activities scoped out of the assessment

Activity	Potential effects scoped out of the assessment
Construction Phase	
UXO clearance	Effects related to any potential UXO clearance works (including identification survey) have been excluded, and if required would be subject to a separate licence application process.
Decommissioning phase – *in situ*	
All associated activities	No effects on offshore ornithology receptors are expected to occur as a result of de-energising and leaving cables *in-situ*.

Study Area

9.4.6 The study area for the offshore ornithology assessment is defined as the Offshore Cable Corridor which runs from the MHWS to the UK EEZ boundary, plus a surrounding 2 km buffer.

9.4.7 The study area is based on a likely ZoI of works, as there is the potential to disturb and/or displace birds present within 2 km of the Offshore Cable Corridor due to noise and visual disturbance during the construction, operation (where infrequent maintenance or repairs are required) and decommissioning phases of the Proposed Development. This is highly precautionary and is based on professional judgment.

9.4.8 Although any disturbance and/or displacement would only potentially occur within 2 km of the Offshore Cable Corridor, it should be noted that seabird species are highly mobile and forage a considerable distance from their breeding colonies.

9.4.9 For example, even if a breeding seabird colony was further than 2km from the Offshore Cable Corridor and there would be no disturbance and/or displacement effects at the nest site, there could still be displacement and/or disturbance effects on birds breeding at the colony which travel to forage within the study area.

9.4.10 For breeding seabird species, published mean-maximum foraging ranges have been used to establish potential connectivity between the study area and breeding colonies, some of which are designated sites (Woodward *et al*. 2019).

9.4.11 There is no guidance or literature to support a specific distance for the consideration of functional linkage of breeding seabirds, however, using professional judgement it is considered that breeding colonies up to 236 km (the mean-max foraging range plus one standard deviation for lesser black-backed gull *Larus fuscus*) from the study area may have connectivity, where the study area has the potential to support foraging birds breeding at these colonies.

9.4.12 In addition, more distant colonies have the potential to be functionally linked to the study area should they host seabirds with extremely large foraging ranges, such as Manx shearwater *Puffinus puffinus*, Leach's petrel *Hydrobates leucorhous*, storm petrel *H. pelagicus*, fulmar *Fulmarus glacialis* and gannet *Morus bassanus* which have mean-max foraging ranges between 315 and 1,347 km.

9.4.13 No sites over 236 km from the study area have been considered in this report as the study area would constitute a negligible proportion of their overall foraging range. Additionally, it is not anticipated that birds from these colonies will reach the study area in sufficient numbers to warrant inclusion within the assessment.

9.4.14 Some of these locations over 236 km from the study area, also have no straight-line route to the site without crossing over land and as seabirds generally avoid overland flights this means that foraging distances that would need to be travelled to fly to the study area are in effect, much greater than they would be if measured in a straight line.

9.4.15 The Offshore Cable Corridor, study area and the 236 km buffer beyond the study area are shown on Volume 3, Figure 9.1 of this PEIR.

Methodology for Baseline Studies

Desk Studies

9.4.16 A high-level desk study has been conducted to characterise the offshore ornithology baseline using a range of existing ecological data. Sources used are outlined in **Table 9.7**.

Table 9.7: Desk Study Sources

Source	Summary
MAGIC Map, Natural England and Natural Resources Wales websites	These sources have been used to determine designated sites with potential connectivity to the study area, and data on designated sites, including location, size and qualifying features.
British Trust for Ornithology Non-Estuarine Waterbird Survey (NEWS) Report and online data	This source contains data collected from volunteer surveys (most recently during 2015 to 2016) displaying species distribution within non-estuarine environments. This includes data to determine species likely to be present within nearshore environments at the proposed landfall location.
Seabird Monitoring Programme (SMP) data	The Seabird Monitoring Programme is an annual monitoring programme which was established in 1986 to monitor the breeding populations and breeding success of 25 species of seabird which breed in Britain and Ireland. These data have been used to determine seabird colonies which have connectivity to the study area based on the mean-max foraging range of the breeding species present.
Waggitt *et al.* (2020)	Provides large-scale data on seabird density across the UK during the breeding and non-breeding seasons, which have been used to determine species distribution within the study area.
Joint SNCB Interim Displacement Guidance Note (JNCC)	Published, peer reviewed scientific literature on bird behaviour and potential impacts from OWFs (transferable offshore literature).
Parsons *et al.* (2019)	A summary of evidence from several sources to help identify important marine areas in the UK that are used by Balearic shearwater *Puffinus mauretanicus.*
Kober *et al*. (2010)	Analysis of European Seabirds At Sea (ESAS) data, conducted to identify and delineate seabird aggregations within the British Fishery Limit that might qualify as Special Protection Areas (SPAs).
Furness *et al*. (2015)	Non-breeding season data on seabird populations in UK waters which categorises species into distinct geographical populations.
Bradbury *et al.* (2014)	Published, peer reviewed scientific literature on seabird sensitivity to OWFs (relevant to other infrastructure types).
Burnell *et al.* (2023)	Census of Britain and Ireland's breeding seabirds, providing up to date population data.
Woodward *et al*. (2019)	Updated seabird foraging ranges to inform Habitat Regulations Assessment (HRA), which can be used to determine potential connectivity of breeding colonies to the study area.
Stone *et al*. (1995)	Atlas of seabird distribution in north-west European waters.
Trektellen	Website which collates records of migratory birds globally, which has been used to determine presence of migratory species.

Site-Specific Surveys

9.4.17 No site-specific surveys have been undertaken for offshore ornithology to date, and no future surveys are proposed. This is consistent for example, with the approach that is used to assess the impacts arising from export cables associated with offshore wind farms in England and Wales.

9.4.18 Due to the very low magnitude of potential effects and short duration of proposed works, it is considered that a desk-based approach is sufficient to establish the baseline and determine that there is no pathway for significant effects to ornithological receptors.

Impact Assessment Methodology

Overview

9.4.19 The approach to determining the significance of effects is a two-stage process that involves defining the sensitivity of the receptor and the magnitude of the impact. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 5: EIA methodology, of the PEIR.

Receptor Sensitivity/Value

9.4.20 The sensitivity of offshore ornithology receptors to potential impacts is determined by the species' ecology and behaviour. A species' sensitivity to potential impacts can be predicted by information available on species' responses to various stimuli (e.g., predators, noise and visual disturbance) and whether a species ecology makes it vulnerable to potential impacts. The sensitivity of species has been considered when determining the scope of the assessment.

9.4.21 The sensitivity of a receptor is an expression of the likelihood of change when pressure (i.e. a predicted impact) is applied. It is defined by the tolerance (or lack thereof) to a particular impact, along with the capacity for recovery of the receptor. The judgement takes account of information available on the responses of birds to various stimuli (e.g. predators, noise and visual disturbance) and whether a species' ecology makes it vulnerable to potential impacts.

9.4.22 Sensitivity can differ between similar species and between different populations of the same species. Thus, the behavioural responses of offshore ornithology receptors are likely to vary with both the nature and context of the stimulus and the experience of the individual bird. Sensitivity also depends on the activity of the bird.

9.4.23 In addition, individual birds of the same species will differ in their tolerance depending on the level of human disturbance that they regularly experience in a particular area, and have become habituated to (e.g. individuals that forage within close proximity to an area with high human activity levels are likely to have a greater tolerance to anthropogenic disturbance than those that occupy remote locations with little or no human presence).

9.4.24 The value of a receptor is used to provide additional context to the impact assessment and may be used to refine predictions, as appropriate. Conservation value and sensitivity are not necessarily linked for a particular impact. Therefore,

each receptor's conservation value is considered using reasoned judgement when determining their overall sensitivity to any potential impact or effect. For example, a receptor could be of high conservation value (e.g. a qualifying feature of a Special Protection Area (SPA)) but have a low or negligible physical / ecological sensitivity to an effect (or vice-versa). Such reasoned judgement is an important part of the overall narrative used to determine potential impact significance and is used, where relevant, as a mechanism for modifying the sensitivity of an effect assigned to a specific receptor.

9.4.25 The conservation value of ornithological receptors is based on the population from which individuals are predicted to be drawn, reflected in the current understanding of the movements of bird species. The degree / ranking of value, therefore, corresponds to the degree of connectivity predicted between the Offshore Cable Corridor and receptor populations.

9.4.26 Using this approach, the conservation importance of a species seen at different times of year may fall into any of the defined categories. Population status is also considered within the assessment. For example, effects on a declining species population may be of more concern than those on a 'healthy' and expanding species population.

9.4.27 The broad criteria for defining sensitivity in this chapter are outlined in **Table 9.8** below. The definitions of value for offshore ornithology receptors are provided in **Table 9.9.**

Table 9.8: Sensitivity criteria for offshore ornithology receptors

Sensitivity	Definition
Very High	Receptor has very limited tolerance of a potential impact, e.g. strongly displaced by sources of disturbance such as noise, light, vessel movements and the presence of people
High	Receptor has limited tolerance of a potential impact, e.g. moderately displaced by sources of disturbance such as noise, light, vessel movements and the presence of people
Medium	Receptor has some tolerance of a potential impact, e.g. partially displaced by sources of disturbance such as noise, light, vessel movements and the presence of people
Low	Receptor is generally tolerant of a potential impact e.g. minimal displaced by sources of disturbance such as noise, light, vessel movements and the presence of people
Negligible	Receptor is tolerant of a potential impact e.g. not displaced by sources of disturbance such as noise, light, vessel movements and the presence of people

Table 9.9: Value criteria for offshore ornithology receptors

Value	Definition
Very High	• A species which is listed as critically endangered on the International Union for Conservation of Nature (IUCN) Red list. • A species listed as a qualifying feature of an internationally designated site (e.g. SPA or Ramsar) where the designated population is greater than 5% of the biogeographic population.
High	• A species listed as a qualifying feature of an internationally designated site (e.g. SPA or Ramsar). • Species populations present with sufficient conservation importance to meet criteria for SPA selection. • For example, a receptor population for which all individuals at risk can be clearly connected to a particular conservation site of international or national importance.

Value	Definition
Medium	• A species listed as a notified feature of a nationally designated site (e.g. SSSI). • Species populations present with sufficient conservation importance to meet criteria for SSSI selection. • For example, a receptor population for which individuals at risk may be drawn from a mixture of conservation sites of international, national importance and other populations which may also contribute to individuals at risk.
Low	• A species occurring within SPAs, Ramsar sites and SSSIs, but not crucial to the integrity of the site. • Species populations present falling short of SSSI selection criteria but with sufficient conservation importance to likely meet criteria for selection as a local site. • For example, a receptor population for which individuals at risk have no known connectivity to conservation sites of international or national importance. • Other species of conservation concern, including species listed as being of Principal Importance under The Environment (Wales) Act (2016), and those included on the fifth review of UK Birds of Conservation Concern (BoCC5) Red and Amber Lists (Stanbury et al., 2021).
Negligible	• All other species that are widespread and common and which are not present in locally important (or greater) numbers, and which are of low conservation concern (e.g. UK BoCC5 Green List species; Stanbury et al., 2021).

Magnitude of Impact

9.4.28 Impacts on receptors are judged in terms of their magnitude. Magnitude refers to the scale of an impact and is determined on a quantitative basis where possible. This may relate to the area of habitat lost to the development footprint in the case of a habitat feature or predicted loss of individuals in the case of a population of a species of bird.

9.4.29 The criteria for defining magnitude in this chapter are outlined in **Table 9.10** below.

Table 9.10: Impact magnitude criteria for offshore ornithology receptors

Magnitude of impact	Definition
High	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short to long-term and to alter the long-term viability of the population and/ or the integrity of the protected site. Recovery from that change predicted to be achieved in the long-term (i.e., more than five years) following cessation of the development activity.
Medium	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that occurs in the short and long-term, but which is not predicted to alter the long-term viability of the population and/ or the integrity of the protected site. Recovery from that change predicted to be achieved in the medium-term (i.e., no more than five years) following cessation of the development activity.
Low	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long-term harm to the feature/ population. Recovery from that change predicted to be achieved in the short-term (i.e., no more than one year) following cessation of the development activity.

Magnitude of impact	Definition
Negligible	Very slight change from the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site. Recovery from that change predicted to be rapid (i.e., no more than c. six months) following cessation of the development activity.
No Change	No positive or negative change is predicted.

Significance of Effect

9.4.30 The significance of the effect upon offshore ornithology has been determined by considering the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 9.11**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

9.4.31 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

9.4.32 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations.

Table 9.11: Assessment Matrix

Sensitivity of Receptor	Magnitude of Impact				
	No Change	**Negligible**	**Low**	**Medium**	**High**
Negligible	No Change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No Change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No Change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No Change	Minor	Minor or Moderate	Moderate or Major	Major
Very High	No Change	Minor	Moderate or Major	Major	Major

9.4.33 Where the magnitude of impact is ‘no change’, no effect would arise.

9.4.34 The broad definitions for significance of effect levels are described as follows:

- **Major**: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
- **Moderate**: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an

increase in the overall adverse or beneficial effect on a particular resource or receptor.

- **Minor**: These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
- **Negligible**: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.
- **No change**: No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Assumptions and Limitations of the Assessment

9.4.35 The marine environment can be highly variable, both spatially and temporally, meaning that seabird numbers may fluctuate greatly between months, bio-seasons and between different years at any given location, lowering the probability of being able to detect consistent patterns, directional changes or to generate reliable population estimates. The most recent guidance and data available has been used to inform the assessment.

9.4.36 The existing data available (**Table 9.7**) are deemed sufficient to characterise the baseline environment and for the purposes of the offshore ornithology EIA.

9.5 Baseline Environment

Identification of designated sites

9.5.1 A search was made for designated sites with potential connectivity to the study area. This included any SPAs, Ramsar sites and SSSIs designated for ornithological features within 236 km of the study area.

9.5.2 Sites were assessed as having potential connectivity to the study area if designated for an ornithological feature which could potentially forage within the study area, based on mean-max foraging ranges detailed by Woodward *et al.,* (2019).

9.5.3 The following sites of international importance (SPA and Ramsar sites) designated for their ornithological features with potential connectivity to the study area have been identified (**Table 9.12**). Qualifying features of designated sites which have no potential connectivity to the study area have been omitted.

Table 9.12: Designated sites of international importance with potential connectivity to the study area (with ornithological interest)

Site Name	Designation	Distance from study area*	Qualifying features with potential connectivity to the study area
Isles of Scilly	SPA and Ramsar	36 km	• Storm petrel • Lesser black-backed gull • Great black-backed gull *Larus marinus* • Seabird assemblage

Site Name	Designation	Distance from study area*	Qualifying features with potential connectivity to the study area
Skomer, Skokholm and the seas off Pembrokeshire	SPA	47 km	• Manx shearwater • Puffin *Fratercula arctica* • Lesser black-backed gull • Storm petrel • Seabird assemblage
Severn Estuary	Ramsar	77 km	• Lesser black-backed gull
Grassholm	SPA	78 km	• Gannet
Aberdaron Coast and Bardsey Island	SPA	169 km	• Manx shearwater
*It should be noted that some site boundaries include marine habitats, and therefore the distance between the study area and breeding colonies may be greater than the distance stated.			

9.5.4 The following SSSIs of national importance designated for their ornithological features with potential connectivity to the study area have been identified (**Table 9.13**). Qualifying features of designated sites which have no potential connectivity to the study area have been omitted.

Table 9.13: Designated sites of national importance with potential connectivity to the study area (with ornithological interest)

Site Name	Designation	Distance from study area*	Qualifying features with potential connectivity to the study area
Lundy	SSSI	2 km	• Guillemot *Uria aalge* • Kittiwake *Rissa tridactyla* • Manx shearwater • Puffin • Razorbill *Alca torda*
St Helen's (with Northwethel and Men-A-Vaur)	SSSI	39 km	• Razorbill • Guillemot • Fulmar
Annet	SSSI	40 km	• Manx shearwater • Storm petrel • Lesser black-backed gull • Great black-backed gull • Puffin
Pentle Bay, Merrick and Round Islands	SSSI	40 km	• Storm petrel
Pentire Peninsula	SSSI	40 km	• Fulmar • Guillemot • Puffin • Razorbill
Tintagel Cliffs	SSSI	42 km	• Breeding assemblage, including: – Razorbill – Kittiwake – Great black-backed gull – Lesser black-backed gull

Site Name	Designation	Distance from study area*	Qualifying features with potential connectivity to the study area
			– Herring gull *Larus argentatus* – Fulmar – Puffin
Chapel Down (St. Martins)	SSSI	44 km	• Kittiwake
Godrevy Head to St Agnes	SSSI	46 km	• Kittiwake • Breeding assemblage, including: – Razorbill – Guillemot
Castlemartin Range	SSSI	54 km	• Seabird assemblage, including: – Guillemot – Razorbill – Kittiwake – Puffin
Gerrans Bay to Camels Cove	SSSI	68 km	• Guillemot • Kittiwake • Breeding assemblage • Razorbill
Skokholm	SSSI	72 km	• Storm petrel • Manx shearwater • Puffin • Razorbill • Guillemot • Lesser black-backed gull • Seabird assemblage, including: – Fulmar – Herring gull – Great black-backed gull
Skomer Island and Middleholm	SSSI	75 km	• Storm petrel • Manx shearwater • Puffin • Razorbill • Guillemot • Lesser black-backed gull • Kittiwake • Breeding assemblage – Fulmar – Herring gull
Grassholm	SSSI	80 km	• Gannet
Flat Holm	SSSI	86 km	• Lesser black-backed gull
Berry Head to Sharkham Point	SSSI	86 km	• Guillemot

Site Name	Designation	Distance from study area*	Qualifying features with potential connectivity to the study area
Prawle Point and Start Point	SSSI	94 km	• Breeding assemblage, including: – kittiwake
Ynys Enlli	SSSI	179 km	• Manx shearwater
Gwylan Islands	SSSI	183 km	• Puffin
*It should be noted that some site boundaries include marine habitats, and therefore the distance between the study area and breeding colonies may be greater than the distance stated.			

9.5.5 The nearest designated site to the study area is Lundy SSSI, which is an offshore island west of Devon, situated 2 km north of the study area. All other relevant designated sites are more than 35 km from the study area. The routing of the Offshore Cable Corridor has been informed by route optimisation studies which included potential ornithological constraints via considerations to avoid all designated sites where possible.

Desk Study

9.5.6 The Celtic Sea is important for seabirds throughout the year, providing foraging grounds for seabirds breeding in adjoining coastal areas during the breeding season, from colonies further afield in the non-breeding season, and for sub-adult birds (pre-breeding age) throughout the year.

9.5.7 Overall, at least 23 seabird species breed on coastal areas around the Celtic Sea, including important populations of Manx shearwater, storm petrel and gannet (ICES, 2022). This includes colonies which are designated sites as outlined in **Table 9.12** and **Table 9.13**.

9.5.8 Species which have the potential to forage within the study area are those which breed at colonies which are within their mean-max foraging range (plus one standard deviation, as outlined in Woodward *et al.* (2019)). Seabird Monitoring Programme data shows a number of breeding colonies present with potential connectivity to the study area, including colonies which are designated as SPAs, Ramsar sites and SSSIs.

9.5.9 The desk-based assessment finds that the following species may have potential connectivity with the study area (with receptor descriptions presented in **Table 9.14**):

- Kittiwake;
- Great black-backed gull;
- Herring gull;
- Lesser black-backed gull;
- Guillemot;
- Razorbill;
- Puffin;
- Storm petrel;
- Fulmar;

- Great shearwater *Ardenna gravis;*
- Manx shearwater;
- Balearic shearwater;
- Gannet; and
- Cormorant *Phalacrocorax carbo*.

9.5.10 Although large numbers of birds are known to be present in the Celtic Sea, particularly during the breeding season, none of the data sources consulted indicated that the study area is of particular importance for any species listed in comparison to the surrounding habitat outside the study area (as per consultation discussions with Natural England and the JNCC). Therefore, it is considered unlikely that these species are likely to be present within the study area in notable densities compared to the surrounding habitat.

Future Baseline Conditions

9.5.11 The current baseline description above provides an accurate reflection of the current state of the existing environment and is deemed directly relevant to the construction phase baseline (pre-construction works anticipated to commence in 2027, ahead of initial cable lay campaigns in 2028). Outside of short-term or seasonal fluctuations, changes to the baseline in relation to offshore ornithology usually occur over an extended period. Based on current information regarding reasonably foreseeable events over the next five-six years (based on UK pre-construction activities starting in 2027), the baseline is not anticipated to fundamentally change from its current state at the point in time when impacts could occur.

9.5.12 It should be noted that during 2023, there were exceptional numbers of Cory's shearwater and increased numbers of great shearwater present in the Celtic Seas during the summer and early autumn post-breeding based on Trektellen data and anecdotal records (pers comms. Simon Warford).

9.5.13 This northward displacement of birds can potentially be attributed to warmer sea temperatures due to a strong La Niña event and is considered to be irregular. However, it could be indicative of a possible future baseline in the event of warming sea surface temperatures.

9.5.14 Over a longer timescale, in the absence of significant local impacts, it is likely that the populations of bird species present will evolve in accordance with regional and national trends. The assumed operational life of the Proposed Development is 50 years, and therefore there exists the potential for the baseline to evolve between the time of assessment and point of operation and maintenance phase or decommissioning phase impact.

9.5.15 Should the Proposed Development be constructed or not, changes in species populations are likely to result from climatic factors (such as temperature change and subsequent impacts on species' ranges) and other natural phenomena (such as the recent avian influenza epidemic), or anthropogenic activities such as changes in fishing activities indirectly affecting marine bird communities. Baseline conditions are therefore not static and are likely to exhibit some degree of change over time independent of the Proposed Development.

9.5.16 A principal consideration of the assessment is distance to breeding colonies, rather than the precise size of the breeding population at those colonies. Thus any

modest change to breeding populations over the course of the proposed development lifetime would be unlikely to result in changes to the operational phase assessment of impact significance presented in this PEIR chapter.

Key Receptors

9.5.17 **Table 9.14** identifies the offshore ornithology receptors taken forward into the assessment, together with their value (includes consideration of conservation objectives) and their sensitivity (to impacts).

Table 9.14: Key receptors taken forward to assessment

Receptor	Description	Sensitivity	Value
Kittiwake	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) shows that kittiwake is likely to be present within the study area, with greater numbers overwintering than present during the breeding season. Kittiwake is a Red listed Bird of Conservation Concern (BoCC) which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that kittiwake also breeds at a number of non-designated colonies with potential connectivity to the study area.	Low	Medium
Great black-backed gull	Data from Furness *et al*. (2015) shows that great black-backed gull is likely to be present within the study area in the non-breeding season. Great black-backed gull is an Amber listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that great black-backed gull also breeds at a number of non-designated colonies with potential connectivity to the study area.	Low	High
Herring gull	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) shows that herring gull is likely to be present within the study area, however the Offshore Cable Corridor appears to support a relatively low density of birds in the context of the UK distribution. Herring gull is a Red listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that herring gull also breeds at a number of non-designated colonies with potential connectivity to the study area.	Low	Medium
Lesser black-backed gull	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) show that lesser black-backed gull is likely to be present within the study area, with greater numbers present during the breeding season. The Offshore Cable Corridor does not appear to support a particularly high density of birds in the context of the UK distribution.	Low	Very high

Receptor	Description	Sensitivity	Value
	Lesser black-backed gull is an Amber listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that lesser black-backed gull also breeds at a number of non-designated colonies with potential connectivity to the study area.		
Guillemot	Data from Waggitt et al. (2019) and Furness et al. (2015) shows that guillemot is likely to be present within the study area, with greater numbers present during the non-breeding season. The Offshore Cable Corridor does not appear to support a particularly high density of birds in the context of the UK distribution and supports a low density of birds during the breeding season. Guillemot is an Amber listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that guillemot also breeds at a number of non-designated colonies with potential connectivity to the study area.	Medium	Medium
Razorbill	Data from Waggitt et al. (2019) and Furness et al. (2015) shows that razorbill is likely to be present within the study area, with greater numbers present during the non-breeding season. The Offshore Cable Corridor does not appear to support a particularly high density of birds in the context of the UK distribution during either the breeding or non-breeding seasons. Razorbill is an Amber listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that razorbill also breeds at a number of non-designated colonies with potential connectivity to the study area.	Medium	Medium
Puffin	Data from Waggitt et al. (2019) and Furness et al. (2015) shows that puffin is unlikely to be present within the study area unless in very low densities. Puffin is a Red listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that puffin also breeds at a number of non-designated colonies with potential connectivity to the study area.	Medium	High
Storm petrel	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) shows that storm petrel is generally absent from the study area during the non-breeding season, although could be present at higher densities in offshore waters during the breeding season. This species has a very large foraging range.	Low	High

Receptor	Description	Sensitivity	Value
	Storm petrel is an Amber listed BoCC and is also listed on Annex I of the Birds' Directive. It breeds at a number of designated sites with potential connectivity to the study area in the Isles of Scilly and on Grassholm.		
Fulmar	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) shows that fulmar is likely to be present within the study area at similar densities year-round. The Offshore Cable Corridor does not appear to support a particularly high density of birds in the context of the UK distribution. Fulmar is an Amber listed BoCC which is a qualifying feature of a number of designated sites which have potential connectivity to the study area. Seabird Monitoring Programme data shows that fulmar also breeds at a number of non-designated colonies with potential connectivity to the study area.	Low	Medium
Great shearwater	Great shearwater is a Green listed BoCC and does not breed within the UK. There is the potential for birds to be present within the study area during the autumn post-breeding, and data from Trektellen shows that numbers were particularly high within the Celtic Sea during 2023.	Low	Negligible
Manx shearwater	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) shows that Manx shearwater is unlikely to be present within the study area during the non-breeding season, however the Celtic Seas are important for foraging birds during the breeding season, particularly close to breeding colonies. This species has a very large foraging range. Manx shearwater is an Amber listed BoCC, and listed on Annex I of the Birds' Directive and which breeds at high densities in a small number of locations in the UK, with colonies which are designated sites having potential connectivity to the study area.	Low	Very high
Balearic shearwater	Balearic shearwater is a Red listed BoCC, is listed on Annex I of the Birds' Directive and is considered Critically Endangered by the IUCN[1]. The species does not breed within the UK. There is the potential for birds to be present within the study area during the autumn post-breeding, and data from Trektellen shows that numbers were elevated within the Celtic Sea during 2023.	Low	Very high

[1] https://www.iucnredlist.org/species/22728432/166437191 [accessed on 16/02/24]

Receptor	Description	Sensitivity	Value
Gannet	Data from Waggitt *et al*. (2019) and Furness *et al*. (2015) shows that gannet is likely to be present within the study area during the non-breeding and breeding seasons, particularly close to breeding colonies. Gannet is an Amber listed BoCC and only breeds at a small number of locations in the UK, however it has a large foraging range. Grassholm SPA/SSSI is designated for its breeding gannet population, while the nearby St Margaret's Island also holds breeding pairs which could forage within the study area.	Low	Very high
Cormorant	Seabird Monitoring Programme data shows that cormorant breeds at a number of colonies with potential connectivity to the study area. As this species has a relatively small foraging range it is only likely to be present in nearshore areas. Cormorant is a Green listed BoCC and it is not a qualifying feature of any designated sites which have potential connectivity to the study area.	Low	Negligible
Sensitivity has been quantified using key literature including Bradbury *et al*., 2014; Furness *et al*., 2013 and JNCC (2022)			

9.6 Key Parameters for Assessment

Maximum Design Scenario

9.6.1 The maximum design scenarios identified in **Table 9.15** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the PEIR. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g., different cable installation method), to that assessed here, be taken forward in the final design scheme. Therefore, this comprises a conservative assessment of a worst-case scenario.

Table 9.15: Maximum design scenario considered for the assessment of potential impacts

Potential Impact	Phase[1]					Maximum Design Scenario	Justification
	C	Op	Op repair	D in-situ	D remove		
Direct impacts - disturbance, displacement and impacts on foraging birds Indirect impacts due to effects on prey species and habitats Accidental pollution during construction, operation and maintenance, and decommissioning (including indirect effects)	Yes	No	Yes	No	Yes	**Construction phase** Phased construction activities. Pre-lay works may commence in 2027. Cable lay activities due to start Q1 2028. Second bundle cable lay due to start 2030. Burial and protection activities to progress broadly in parallel, with protection taking longer to completion. Activities assumed 24 hours a day but transient along the Offshore Cable Corridor (the proposed cable laying vessel speed is estimated at 500m per hour, while the protection vessels present would move at a slower speed of approximately 100m per hour). Vessels to be involved in the cable installation include: one (two at changeovers) CLV; four trenching vessels; 20 guard vessels; two rock placement vessels. A maximum of two jack-up/multi-cat vessels will also be required for HDD works, while tugs, workboats and and survey vessels will also be required for survey works, route preparation and cable crossing works. **Operation phase (normal)** No routine maintenance anticipated. Surveys of the cables to be undertaken up to once per year in the first 5 years, then approx once every 5 years thereafter. 50-year design life for the cable. **Operation phase (repair)** Unplanned repair works may require similar vessels (on temporary, localised basis) to those used in the construction phase. **Decommissioning phase (*in-situ*)** No vessel traffic anticipated. **Decommissioning phase (removal)** Assumed similar to construction phase (a worst case assumption).	Maximum vessel numbers and construction period will be assumed, as this will be the design scenario with the greatest magnitude. Design life selected to reflect the full duration of the impact.

9.7 Mitigation Measures Adopted as Part of the Proposed Development

9.7.1 As part of the Proposed Development design process, several mitigation measures have been adopted to reduce the potential for impacts on offshore ornithology (**Table 9.16**). This approach has been employed in order to demonstrate commitment to measures by including them in the design of the Project, and have therefore been considered in the assessment presented in **sections 9.7.3** to **9.10**, below. These measures are considered standard industry practice for this type of development. Assessment of sensitivity, magnitude and therefore significance includes implementation of these measures.

9.7.2 The mitigation measures proposed as part of the Proposed Development include the following types of mitigation:

- Primary (inherent) mitigation – measures included as part of the Proposed Development design. The Institute of Environmental Management and Assessment (IEMA) describes these as '*modifications to the location or design of the development made during the pre-application phase that are an inherent part of the Proposed Development and do not require additional action to be taken*'. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself, through the description of the Proposed Development and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
- Secondary (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome'*. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through an environmental management plan.
- Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects'*. It may be helpful to secure such measures through the Offshore Construction Environmental Management Plan (an outline Offshore CEMP is provided as PEIR Volume 1, Appendix 3.3, which will continue to be developed and submitted as part of the DCO application).

Table 9.16: Mitigation measures adopted as part of the Proposed Development

Measure Adopted	How the Measure Will be Secured
Primary mitigation	
Impacts on sensitive ornithology receptors (particularly designated sites) have been minimised when determining the offshore cable corridor. For example, SPAs designated for breeding seabirds have been avoided, which will result in no direct impacts at breeding colonies.	Inherent to project design (as secured by DCO).
Secondary mitigation	
N/A	

Measure Adopted	How the Measure Will be Secured
Tertiary mitigation	
Adherence to standard pollution prevention measures (which will be ensured via an Offshore CEMP)	Best practice will be followed to ensure legal compliance. Secured within DCO requirements and outline Offshore CEMP.
Development of and adherence to a Vessel Management Plan (VMP).	The VMP will confirm the types and numbers of vessels that will be engaged on the Proposed Development and consider vessel coordination including indicative transit route planning. Pre-requisite contractor requirement – secured via final Offshore CEMP.

9.7.3 Consultations are underway with Natural England regarding timing of works to avoid the breeding season when working near Lundy. As discussions are currently at a preliminary stage, the potential for this to be implemented is uncertain. This will be discussed in detail within the Environmental Statement.

9.8 Preliminary Assessment of Construction Effects

9.8.1 The impacts of the construction of the Proposed Development have been assessed. A summary of the preliminary potential impacts arising from the construction phase of the Proposed Development are listed in **Table 9.15**, along with the maximum design scenario against which each impact has been assessed.

9.8.2 A description of the potential effect on receptors caused by the following impacts is given below:

- Visual and noise disturbance;
- Indirect impacts via loss/disturbance to habitats and prey; and
- Pollution incidents.

9.8.3 As the nature and magnitude of impacts are the same for all receptors, where possible duplication of text has been reduced by assessing receptors together.

Visual and noise disturbance

9.8.4 There is the potential for disturbance and/or displacement of birds within the study area due to the presence of vessels during the construction phase. As stated in the Maximum Design Scenario, there is the potential for up to twenty guard vessels, plus installation vessels to be present during the construction phase (noting that guard vessels would be stationed 10 nm apart).

9.8.5 Due to the distance from the Offshore Cable Corridor to breeding seabird colonies, there is no pathway for direct impacts at breeding colonies (including designated sites). However, there is the potential for impacts to qualifying features of designated sites foraging within the study area (functionally linked habitat).

Sensitivity of the Receptor

9.8.6 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying features

of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.8.7 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.8.8 Pre-lay works such as route clearance and boulder removal may take place in 2027 ahead of cable lay and protection works. Cable lay works for Bipole 1 (first cable bundle) are scheduled to begin in Q1 2028 and it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a section laid in 2029.

9.8.9 Dates are indicative at this time and may be influenced by e.g. weather limitations on the CLV. For Bipole 2 (second cable bundle), offshore works would begin in 2030 and would follow a similar schedule.

9.8.10 During all phases, works would be sequential and transient (linear installation), and there is only the potential for impact generating activities within small sections of the study area at any one time. Potential impacts would be highly localised and for a limited, short-term duration and only last as long as vessels are present within c.2 km of any area.

9.8.11 There is the potential for disturbance and displacement of foraging seabirds within a 2 km radius of vessels. As stated in the Baseline Environment section of this chapter (**section 9.5**), it is considered unlikely that the study area supports significant numbers of foraging birds in the context of their UK distribution, or is of elevated importance in comparison to the surrounding area. As vessels would only be present within a discrete area for a short period of time, any impacts arising from noise and visual disturbance would be short-term and reversible. In addition, disturbance from vessels is common within the Celtic Sea (c.f. Volume 3, Chapter 5 of this PEIR: Shipping and Navigation), and therefore species will be habituated to this source of disturbance, which will be similar to the baseline conditions within the wider area.

9.8.12 It should also be noted that the foraging ranges for seabird species which may be disturbed or displaced is very large (Woodward et al., 2019). Therefore, although there is the potential to impact foraging species, the proportion of their overall foraging range within which birds would be displaced from or disturbed is very small. Beyond a 2 km radius from vessels, there would be suitable alternative foraging habitat available for any displaced individuals and therefore foraging could continue throughout works.

9.8.13 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.8.14 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, as outlined in **Table 9.17.**

Table 9.17: Significance of effects arising from visual and noise disturbance

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.8.15 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.8.16 The significance of effect from visual and noise disturbance to offshore ornithology as a result of construction activities is not significant in EIA terms. Therefore, no additional mitigation further to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.8.17 The significance of effect from visual and noise disturbance to offshore ornithology as a result of construction activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

Indirect impacts via loss/disturbance to habitats and prey

9.8.18 Impacts may result from underwater noise or the generation of suspended sediments that may alter the distribution, physiology or behaviour of prey species and thereby have an indirect effect on offshore ornithology receptors. These mechanisms could potentially result in less prey, in the area adjacent to active construction works, being available to foraging seabirds.

9.8.19 For example, if there are impacts on fish, which reduces foraging success, then breeding success of seabird colonies could be negatively impacted.

9.8.20 There is also the potential for foraging to be directly impacted due to increased turbidity which could impact foraging success for species. Again, this would be highly localised and for a limited, short-term duration.

Sensitivity of the Receptor

9.8.21 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.8.22 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.8.23 Any impacts on prey species arising from noise and visual/physico-chemical/chemical disturbance would be short-term and reversible, and any habitats which are impacted are likely to be rapidly recolonised by prey species following cable burial. The area within which prey would be impacted is also very small in relation to the foraging range of qualifying features (Woodward et al., 2019).

9.8.24 Chapter 2: Fish and Shellfish Ecology states that there would be no significant effects on fish or shellfish receptors, which would include prey species of offshore ornithology receptors.

9.8.25 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.8.26 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.18**.

Table 9.18: Significance of effects arising from indirect impacts via loss/disturbance to habitats and prey

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.8.27 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.8.28 The significance of effect from indirect impacts to offshore ornithology via loss/disturbance to habitats as a result of construction activities is not significant in EIA terms. Therefore, no additional mitigation to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.8.29 The significance of effect from indirect impacts to offshore ornithology via loss/disturbance to habitats as a result of construction activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

Pollution incidents

9.8.30 The impact of pollution, including accidental spills and contaminant releases associated with the construction activities and use of supply/service vessels, may lead to direct mortality of birds or indirect impacts via causing a deterioration in habitat quality or a reduction in prey availability, either of which may affect species' survival rates.

Sensitivity of the Receptor

9.8.31 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.8.32 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.8.33 Assuming that best practice during construction is followed, it is considered unlikely that there would be any pollution incidents. Any impact would be of local spatial extent and short-term duration.

9.8.34 The Planning Inspectorate stated in their scoping response that *"significant effects from accidental release of pollution on offshore ornithology receptors during all project phases are unlikely".*

9.8.35 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.8.36 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.19**.

Table 9.19: Significance of effects arising from pollution incidents

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.8.37 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.8.38 The significance of effect from pollution incidents to offshore ornithology receptors as a result of construction activities is not significant in EIA terms. Therefore, no additional mitigation further to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.8.39 The significance of effect from pollution incidents to offshore ornithology as a result of construction activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

9.9 Preliminary Assessment of Operational Effects

9.9.1 The impacts of the operational phase of the Proposed Development have been assessed. The potential preliminary impacts arising from the operational phase of the Proposed Development are listed in **Table 9.15,** along with the maximum design scenario against which each impact has been assessed.

9.9.2 The only identified operational phase impacts with relevance to offshore ornithology are associated with survey and repair activities as needed; therefore, for the vast majority of the operational phase there are not expected to be any effects on offshore ornithology.

9.9.3 A description of the potential effect on receptors caused by each identified potential impact is given below:

- Visual and noise disturbance;
- Indirect impacts via loss/disturbance to habitats and prey; and
- Pollution incidents.

Visual and noise disturbance

9.9.4 There is the potential for disturbance and/or displacement of birds within the study area due to the presence of vessels during the operational phase. No routine maintenance is anticipated, however there will be surveys of the cables undertaken once per year for the first five years of the operational phase, with surveys approximately every five years thereafter for the 50-year operational lifespan.

9.9.5 Where any repair works are required, impacts would likely be equivalent to those during the construction phase, over a very limited area.

9.9.6 Due to the distance from the Offshore Cable Corridor to breeding seabird colonies, there is no pathway for direct impacts at breeding colonies (including designated sites). However, there is the potential for impacts to qualifying features of designated sites foraging within the study area (functionally linked habitat).

Sensitivity of the Receptor

9.9.7 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species. The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.9.8 During the operational phase the magnitude of disturbance and displacement would be greatly reduced from the construction phase, as the number of vessels that would be present is likely to be minimal, and works would be very infrequent.

9.9.9 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.9.10 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.20**.

Table 9.20: Significance of effects arising from visual and noise disturbance

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible

Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.9.11 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.9.12 The significance of effect from visual and noise disturbance to offshore ornithology receptors, as a result of operational activities is not significant in EIA terms. Therefore, no additional mitigation to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.9.13 The significance of effect from visual and noise disturbance to offshore ornithology as a result of operational activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

Indirect impacts via loss/disturbance to habitats or prey

9.9.14 It is unlikely that there would be any impacts on habitats of prey during the operational phase unless repair works were required. If this were the case, impacts may result from underwater noise or the generation of suspended sediments that may alter the distribution, physiology or behaviour of prey species and thereby have an indirect effect on offshore ornithology receptors.

9.9.15 These mechanisms could potentially result in less prey in the area adjacent to works being available to foraging seabirds.

Sensitivity of the Receptor

9.9.16 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.9.17 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.9.18 During the operational phase the magnitude would be greatly reduced compared to the construction phase, as the number of vessels that would be present is likely to be minimal. In the event of repair works, this would be short-term and over a very small area.

9.9.19 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.9.20 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.21**.

Table 9.21: Significance of effects arising from visual and indirect impacts via loss/disturbance to habitats and prey

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.9.21 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.9.22 The significance of effect from indirect impacts to offshore ornithology via loss/disturbance to habitats as a result of operational activities is not significant in EIA terms. Therefore, no additional mitigation further to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.9.23 The significance of effect from indirect impacts to offshore ornithology via loss/disturbance to habitats as a result of operational activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

Pollution incidents

9.9.24 The impact of pollution, including accidental spills and contaminant releases associated with operational phase (repair) activities may lead to direct mortality of birds or indirect impacts via a deterioration in habitat quality or a reduction in prey availability, either of which may affect species' survival rates.

Sensitivity of the Receptor

9.9.25 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.9.26 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.9.27 As minimal works are predicted during the operational phase, the likelihood of pollution incidents is reduced in comparison to the construction phase.

9.9.28 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.9.29 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.22**.

Table 9.22: Significance of effects arising from visual and noise disturbance

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.9.30 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.9.31 The significance of effect from pollution incidents to offshore ornithology as a result of operational activities is not significant in EIA terms. Therefore, no additional mitigation further to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.9.32 The significance of effect from pollution incidents to offshore ornithology as a result of operational activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

9.10 Preliminary Assessment of Decommissioning Effects

9.10.1 The impacts of the decommissioning phase of the Proposed Development have been assessed. The potential preliminary impacts arising from the decommissioning phase of the Proposed Development are listed in **Table 9.15,** along with the maximum design scenario against which each impact has been assessed.

9.10.2 Current best practice, and the least environmentally damaging option, is to de-energise the cable, disconnect it from the system, and secure it in place to be left *in-situ*, thereby avoiding unnecessary seabed disturbance.

9.10.3 However, other options may include the requirement for full or partial removal of the cables. The methods for removal, where the cable is buried, would be broadly similar to those used for installation with the potential for the cables to be removed by direct pulling, rather than de-burial. The requirement for any removal could also apply to other infrastructure installed as part of the project i.e. cable protection. The footprint of decommissioning activities would be reduced, relative to the construction phase.

9.10.4 The potential impacts arising from the decommissioning phase of the Proposed Development will be subject to appropriate consenting requirements and EIA at the time of decommissioning.

9.10.5 A description of the potential effect on receptors caused by each identified potential impact is given below:

- Visual and noise disturbance;
- Indirect impacts via loss/disturbance to habitats and prey; and
- Pollution incidents.

Visual and noise disturbance

9.10.6 If cables are left *in-situ* following decommissioning, then no disturbance effects are anticipated. If removal of cables was required, then it is anticipated that the disturbance effects would be equivalent to those outlined for the construction phase in **Section 9.8** (worst case precautionary assessment).

Sensitivity of the Receptor

9.10.7 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.10.8 The receptors which could be impacted, and their sensitivities are outlined in **Table 9.14**.

Magnitude of Impact

9.10.9 Should removal of cables be required during decommissioning (and adopting a precautionary approach), the magnitude of disturbance effects would be equivalent to those outlined for the construction phase in **Section 9.8**. The magnitude is therefore **negligible.**

Significance of the Effect

9.10.10 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.23**.

Table 9.23: Significance of effects arising from visual and noise disturbance

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.10.11 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.10.12 The significance of effect from visual and noise disturbance to offshore ornithology as a result of decommissioning activities is not significant in EIA terms. Therefore, no additional mitigation further to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.10.13 The significance of effect from visual and noise disturbance to offshore ornithology as a result of decommissioning activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

Indirect impacts via loss/disturbance to habitats

9.10.14 If cables were left *in-situ* following decommissioning, then no indirect effects are anticipated. If removal of cables is required, then it is anticipated that the disturbance effects would be equivalent to those outlined for the construction phase in **Section 9.8** (adopting a precautionary worst-case approach).

Sensitivity of the Receptor

9.10.15 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.10.16 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.10.17 If removal of cables was required during decommissioning, the magnitude of indirect effects would be equivalent to those outlined for the construction phase in **Section 9.8** (adopting a precautionary worst-case approach).

9.10.18 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.10.19 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.24**.

Table 9.24: Significance of effects arising from visual and noise disturbance

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible

Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.10.20 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.10.21 The significance of effect from indirect impacts to offshore ornithology via loss / disturbance to habitats as a result of decommissioning activities is not significant in EIA terms. Therefore, no additional mitigation further to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.10.22 The significance of effect from indirect impacts to offshore ornithology via loss/disturbance to habitats as a result of decommissioning activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

Pollution incidents

9.10.23 If cables are left *in-situ* following decommissioning, then no pollution effects are anticipated. If removal of cables is required, then it is anticipated that the potential for pollution effects would be equivalent to those outlined for the construction phase in **Section 9.8** (adopting a precautionary worst-case approach).

Sensitivity of the Receptor

9.10.24 There is the potential for foraging seabirds to be present within the study area during the breeding and non-breeding seasons. This includes qualifying species of designated sites with potential connectivity to the study area, as the distance to the study area from breeding colonies is within the mean-max foraging range (plus one standard deviation) of a number of seabird species.

9.10.25 The receptors which could be impacted, and their sensitivity is outlined in **Table 9.14**.

Magnitude of Impact

9.10.26 If removal of cables was required during decommissioning, the magnitude of pollution effects would be equivalent to those outlined for the construction phase in Section 9.8 (adopting a precautionary worst-case approach).

9.10.27 The magnitude of potential impact is therefore assessed to be **negligible**.

Significance of the Effect

9.10.28 The magnitude of the impact and the sensitivity of each receptor have been used to determine the significance of effect, which is outlined in **Table 9.25**.

Table 9.25: Significance of effects arising from visual and noise disturbance

Receptor	Sensitivity	Magnitude	Significance
Kittiwake	Low	Negligible	Negligible
Great black-backed gull	Low	Negligible	Negligible
Herring gull	Low	Negligible	Negligible
Lesser black-backed gull	Low	Negligible	Negligible
Guillemot	Medium	Negligible	Negligible
Razorbill	Medium	Negligible	Negligible
Puffin	Medium	Negligible	Negligible
Storm petrel	Low	Negligible	Negligible
Fulmar	Low	Negligible	Negligible
Great shearwater	Low	Negligible	Negligible
Manx shearwater	Low	Negligible	Negligible
Balearic shearwater	Low	Negligible	Negligible
Gannet	Low	Negligible	Negligible
Cormorant	Low	Negligible	Negligible

9.10.29 The effect will, therefore, be of **negligible** significance, which is **not significant** in EIA terms for all receptors.

Further Mitigation

9.10.30 The significance of potential effect from pollution incidents to offshore ornithology as a result of decommissioning activities is not significant in EIA terms. Therefore, no additional mitigation to the already embedded measures (**Table 9.16**) are considered necessary. No significant adverse residual effects have been predicted in respect of offshore ornithology.

Future Monitoring

9.10.31 The significance of effect from potential pollution incidents to offshore ornithology as a result of decommissioning activities is not significant in EIA terms. Therefore, no future monitoring is considered necessary.

9.11 Cumulative Effects Assessment

9.11.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Proposed Development together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 1, Appendix 5.3: CEA screening matrix, of the PEIR). Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

9.11.2 The offshore ornithology CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA Methodology of the PEIR. As part of the assessment, all projects and plans considered alongside the Proposed Development have

been allocated into ‘tiers’ reflecting their current stage within the planning and development process (as advocated under the Planning Act, 2008).

- Tier 1
  - Under construction
  - Permitted application
  - Submitted application
  - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact
- Tier 2
  - Scoping report has been submitted
- Tier 3
  - Scoping report has not been submitted
  - Identified in the relevant Development Plan
  - Identified in other plans and programmes.

9.11.3 This tiered approach is adopted to provide a clear assessment of the Proposed Development alongside other projects, plans and activities.

9.11.4 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 9.26**.

Table 9.26: List of cumulative developments considered within the CEA

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Tier 1						
Celtic Interconnector	Permitted	0 – Crosses offshore cable corridor	700 MW high-voltage direct current submarine power cable under construction between the southern coast of Ireland and the north-west coast of France. The UK elements of the Celtic Interconnector comprise: • A submarine cable within the UK EEZ approximately 211 km in length placed on or beneath the seabed. It passes approximately 30km west of the Isles of Scilly and approximately 75 km west of Land's End, but does not enter UK Territorial Waters. • Secondary rock protection using rock placement (if required), where target depth of cable lowering is not fully achieved or at cable crossings, with a linear extent of between 0 km and 80 km or 0 to 270 tonnes. • A fibre optic link shall be laid along the cable route for operational control, communication and telemetry purposes.	2024	2027	Not within construction phase but will overlap during operational phase

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			It is programmed that installation phase of the offshore route will commence in 2024, for it to become fully operational by 2027.			
White Cross Offshore Windfarm	Permitted	7.8 (with potential overlap with the indicative route corridor for the White Cross export cable)	Proposed offshore windfarm located in the Celtic Sea with a capacity of up to 100 MW. The Windfarm Site is located over 52 km off the North Cornwall and North Devon coast (west-north-west of Hartland Point), in a water depth of 60m – 80m. The Windfarm Site covers 50 km^2. The current wind turbine design envelope for the project is a WTG capacity of 12-24 MW, 6-8 three bladed horizontal axis turbines with a rotor diameter of 220-300 m. Construction is anticipated to commence in mid-2024 with the site anticipated to be operational by 2026.	2024	2026	Not within construction phase but will overlap during operational phase
Tier 2						
No known proposed development is at this stage within the planning and development process in relation to cumulative impacts for offshore ornithology receptors.						
Tier 3						
Project Development Area (PDA) 3	Future planned development	0 – Crosses offshore cable corridor	PDA 3 sits within English Governance and is one of three suitable PDAs identified within the Celtic Sea for floating offshore wind development, each of which having a potential capacity of up to 1.5 GW. Currently in the early stages of the project, the	Unknown	Unknown	Unknown at this stage

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			schedule for PDA 3 is unknown, however pre-consent metocean surveys are planned for early 2024 and geotechnical investigations are planned for summer 2024.			

Cumulative Effects Assessment

9.11.5 It should be noted that the CEA presented in this offshore ornithology chapter has been undertaken based on publicly available information presented in the Environmental Statements for the other projects.

9.11.6 In undertaking the CEA for the Proposed Development, it is important to consider that it is less certain if projects and plans in Tier 3, which are not yet consented, may contribute to cumulative impacts with the Proposed Development. This is because some projects may not achieve approval or may not be built due to other factors (e.g. client withdrawal). The projects categorised under Tier 3 could not provide sufficient information to allow a robust assessment of the impacts on offshore ornithology; therefore, all Tier 3 projects have been scoped out of this assessment. No projects were identified under Tier 2 to be assessed within this CEA. Therefore, only projects identified under Tier 1 are included in this CEA.

9.11.7 A description of the significance of cumulative effects upon offshore ornithology receptors arising from construction, operation and decommissioning is given below.

Construction

Tier 1 Projects

9.11.8 The Offshore Cable Corridor of the Proposed Development will overlap with the White Cross Offshore Wind Farm export cable, and the Celtic Interconnector. The construction phase of the Proposed Development would overlap with the operational phases of the Celtic interconnector and White Cross Offshore Wind Farm.

9.11.9 As the potential impacts arising from the Proposed Development during the construction phase are of negligible significance, it is considered that the potential for cumulative effects is minimal. Furthermore, the operational phase impacts on offshore ornithology receptors associated with these two cable projects (the relevant portions of the White Cross OWF project are limited to the export cable) is anticipated to be of negligible significance (based on project type only). Therefore, no detailed CEA has been completed for the construction phase.

Operation and Maintenance

Tier 1 Projects

9.11.10 The Offshore Cable Corridor of the Proposed Development will overlap with the White Cross Offshore Wind Farm export cable, and the Celtic Interconnector. The operational phase of the Proposed Development would overlap with the operational phases of the Celtic interconnector and White Cross Offshore Wind Farm.

9.11.11 As the potential impacts arising from the Proposed Development during the operational phase are of negligible significance, it is considered that the potential for cumulative effects is minimal. Furthermore, the operational phase impacts on offshore ornithology receptors associated with these two cable projects (the relevant portions of the White Cross OWF project are limited to the export cable)

is anticipated to be of negligible significance (based on project type only). Therefore, no detailed CEA has been completed for the operational phase.

Decommissioning

Tier 1 Projects

9.11.12 The Offshore Cable Corridor of the Proposed Development will overlap with the White Cross Offshore Wind Farm export cable, and the Celtic Interconnector. The decommissioning phase of the Proposed Development is assumed (in the absence of detailed project life spans) to overlap with the operational phases of the Celtic interconnector and White Cross Offshore Wind Farm.

9.11.13 As the potential impacts arising from the Proposed Development during the decommissioning phase are of negligible significance, it is considered that the potential for cumulative effects is minimal. Therefore, no detailed CEA has been completed for the decommissioning phase.

9.12 Transboundary Effects

9.12.1 Transboundary effects are defined as those effects upon the receiving environment of other European Economic Area (EEA) states, whether occurring from the Proposed Development alone, or cumulatively with other projects in the wider area. The offshore elements of the Proposed Development (the Offshore Cable Corridor) extend to the edge of the UK EEZ, however the UK project forms just one section of the overall Morocco-UK cable route. The Applicant will seek separate consents for the works within other jurisdictions, with the intention that installation works (construction phase works) would be undertaken in a continuous fashion across jurisdiction boundaries.

9.12.2 A screening of transboundary impacts has been carried out and any potential for significant transboundary effects with regard to offshore ornithology from the Proposed Development upon the interests of other states has been assessed as part of this PEIR chapter. The potential transboundary impacts assessed within Volume 1, Appendix 5.2 of this PEIR are summarised below, which include:

- direct impacts due to disturbance, displacement and impacts on foraging birds;
- indirect impacts due to effects on prey species and habitats; and
- pollution incidents.

9.12.3 Potential transboundary effects have been determined using the study area outlined in **section 9.4**, with any sites or species within 236 km considered (the mean max foraging distance for lesser black-backed gull). The following designated sites listed in **Table 9.27** are within 236 km of the study area.

Table 9.27: Non-UK designated sites within the study area

Site Name	Distance from Proposed Development	Qualifying Features with Potential Connectivity to the Proposed Development
Irish SPAs		
Saltee Islands	157 km	• Fulmar (breeding) • Gannet (breeding) • Lesser black-backed gull (breeding) • Kittiwake (breeding) • Razorbill (breeding) • Puffin (breeding)
Helvick Head to Ballyquin	191 km	• Kittiwake (breeding
Old Head of Kinsale	194 km	• Kittiwake (breeding)
Wicklow Head	222 km	• Kittiwake (breeding)
French SPAs		
Mers Celtiques - Talus du golfe de Gascogne	<1 km (adjacent to Proposed Development within French EEZ)	• Razorbill (concentration) • Cory's shearwater *Calonectris diomedea* (concentration) • Great skua *Stercorarius skua* (concentration) • Puffin (concentration) • Fulmar (concentration) • Black-throated diver *Gavia arctica* (concentration) • Storm petrel (concentration) • Herring gull (concentration) • Common gull *Larus canus* (concentration) • Lesser black-backed gull (concentration) • Great black-backed gull (concentration) • Mediterranean gull *Ichthyaetus melanocephalus* (concentration) • Little gull *Coloeus minutus* (concentration) • Black-headed gull *Chroicocephalus ridibundus* (concentration) • Sabine's gull *Xema sabini* (concentration) • Common scoter *Melanitta nigra* (concentration) • Gannet (concentration) • Leach's storm petrel (concentration) • Cormorant (concentration) • Grey phalarope *Phalaropus fulicarius* (concentration) • Great shearwater (concentration) • Sooty shearwater *Ardenna griseus* (concentration) • Manx shearwater (concentration) • Balearic shearwater *Puffinus mauretanicus* (concentration) • Kittiwake (concentration) • Arctic skua *Stercorarius parasiticus* (concentration)

Site Name	Distance from Proposed Development	Qualifying Features with Potential Connectivity to the Proposed Development
		• Pomarine skua *Stercorarius pomarinus* (concentration) • Common tern *Sterna hirundo* (concentration) • Arctic tern *Sterna paradisaea* (concentration) • Sandwich tern *Thalasseus sandvicensis* (concentration) • Guillemot (concentration)
Ouessant-Molène	114 km	• Lesser black-backed gull (breeding) • Puffin (breeding) • Fulmar (breeding) • Manx shearwater (breeding) • Storm petrel (breeding)
Ilot du Trevors	150 km	• Lesser black-backed gull (breeding)
Camaret	163 km	• Storm petrel (breeding) • Lesser black-backed gull (breeding) • Manx shearwater (breeding) • (Kittiwake) (permanent) • Fulmar (breeding)
Cap Sizun	176 km	• Fulmar (breeding) • Lesser black-backed gull (breeding) • Kittiwake (breeding)
Baie de Morlaix	189 km	• Puffin (breeding) • Storm petrel (breeding) • Lesser black-backed gull (breeding) • Manx shearwater (breeding)
Cote de Granit Rose-Sept Iles	211 km	• Gannet (breeding) • Lesser black-backed gull (breeding) • Fulmar (breeding) • Storm petrel (breeding) • Balearic shearwater (concentration) • Manx shearwater (breeding) • Puffin (breeding)
Archipel de Glenan	223 km	• Lesser black-backed gull (breeding)

9.12.4 As the study area encompasses breeding seabird colonies (including Natura 2000 sites) beyond the UK EEZ, there is the potential for associated seabirds to forage within the Offshore Cable Corridor. Impacts on designated sites including those within other jurisdictions is considered fully within the Habitats Regulations Assessment (HRA) Screening Report, which is submitted alongside the PEIR.

9.12.5 Breeding seabird colonies within the Irish and French EEZs are a considerable distance from the Offshore Cable Corridor, therefore there would be no direct impacts at any seabird colonies. Impacts on foraging birds with connectivity to Irish breeding colonies would be negligible, and at a similar level to UK colonies, which have all been assessed, with negligible significance.

9.12.6 It should also be noted that sites within the French EEZ will be assessed within the separate application which covers the section of the project within the French EEZ. The scale of any potential interaction between the UK activities and many sites in the French jurisdiction will, by definition, be less than the same linear activities when conducted within the French EEZ.

9.12.7 It is considered unlikely that the study area supports significant numbers of foraging birds in the context of their distribution within their foraging range, or in comparison to the surrounding area.

9.12.8 As vessels would only be present within a discrete area for a short period of time, any direct disturbance and/or displacement impacts arising would be short-term and reversible during all stages of the Proposed Development. In addition, disturbance from vessels is common within the Celtic Sea, and therefore species will be habituated to this source of disturbance, which will be similar to the baseline conditions within the wider area (Volume 3, Chapter 5: Shipping and Navigation chapter of the PEIR).

9.12.9 Any indirect impacts on prey species arising from noise, visual, physico-chemical, chemical disturbance would be short-term and reversible (e.g. Volume 3, Chapter 8: Physical Processes chapter of the PEIR), and any (benthic) habitats which are impacted are likely to be rapidly recolonised by prey species following cable burial (Volume 3, Chapter 1 of this PEIR). The area within which prey would be impacted is also very small in relation to the foraging range of seabird species. The Planning Inspectorate has stated in their scoping response that *"direct injury/mortality of fish and shellfish from vessel activities"* can be scoped out of the assessment.

9.12.10 Although there is the potential for pollution impacts, the likelihood of this is low if construction best practice is followed. In addition, any impact would be of local spatial extent, short term duration. The Planning Inspectorate stated in their scoping response that *"significant effects from accidental release of pollution on offshore ornithology receptors during all project phases are unlikely".*

9.12.11 Therefore, as impacts would be of low magnitude, within a local spatial extent, for a short-term duration, it is considered that all transboundary effects would be negligible and therefore **not significant**.

9.13 Inter-related Effects

9.13.1 Inter-relationships are the impacts and associated effects of different aspects of the Proposed Development on the same receptor. These are as follows:

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Proposed Development (construction, operation and maintenance), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g., construction noise effects from cable laying and operational and maintenance geophysical surveys).
- Receptor led effects: Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on marine mammals and sea turtles, such as disturbance from anthropogenic activities (e.g. dredging or rock dumping) or increased vessel presence, may interact to produce a different, or greater effect on this receptor

than when the effects are considered in isolation. Receptor-led effects may be short-term, temporary or transient effects, or incorporate longer term effects.

9.13.2 A description of the likely interactive effects arising from the Proposed Development on fish and shellfish receptors are provided in Volume 4, Chapter 5: Inter-related effects of the PEIR.

9.14 Summary of Impacts, Mitigation Measures and Monitoring

9.14.1 Information on offshore ornithology within the study area was collected via desk study. A subsequent assessment of potential effects on offshore ornithology receptors was carried out, giving consideration to potential impacts as a result of activities undertaken during the construction, operational and maintenance, and decommissioning phases of the Proposed Development.

9.14.2 At EIA Scoping stage, it was concluded, with high confidence, that potential impacts to relevant receptors would be of negligible significance and as such, offshore ornithology was proposed to be scoped out of further assessment at EIA Scoping.

9.14.3 Following the Planning Inspectorate providing a Scoping Opinion on 07 March 2024, responses received from JNCC advised that offshore ornithology should be scoped into the EIA process and included as an aspect chapter within the PEIR and Environmental Statement. After reviewing these responses and JNCC's justifications included in the Scoping Opinion, offshore ornithology was subsequently included as a chapter within the PEIR to ensure a full audit trail of reporting.

9.14.4 **Table 9.28** presents a summary of the impacts, measures adopted as part of the Proposed Development and residual effects in respect to offshore ornithology. The impacts assessed were:

- Visual and noise disturbance;
- Indirect impacts via loss/disturbance to habitats and prey; and
- Pollution incidents.

9.14.5 Overall, it is concluded that there will be no significant effects arising from the construction, operation (and maintenance), or the decommissioning phases of the Proposed Development. This adheres with the conclusion at Scoping stage that potential impacts to all relevant receptors for offshore ornithology would be of negligible significance.

9.14.6 A cumulative assessment has been undertaken which has found that the risk of impact on offshore ornithology receptors is not higher than that assessed for the Proposed Development alone. It is concluded that there will be no significant cumulative effects from the Proposed Development alongside other projects / plans.

9.14.7 The potential for transboundary impacts has been assessed within this chapter of the PEIR as there are relevant designated sites in close proximity to the Offshore Cable Corridor in the French EEZ. Potential for the following transboundary effects have been considered, following a screening exercise:

- direct impacts due to disturbance, displacement and impacts on foraging birds;

- indirect impacts due to effects on prey species and habitats; and
- pollution incidents.

9.14.8 The consideration of transboundary impacts concluded that all potential effects were negligible and therefore not significant. No additional mitigation measures or monitoring are deemed necessary at this stage.

9.14.9 Consultations with Natural England are ongoing regarding timing of construction phase works to ideally avoid the breeding season when working near Lundy. Considerations are currently at a preliminary stage and will be further reported within the Environmental Statement.

Table 9.28: Summary of potential environmental effects

Impact	Sensitivity of receptors	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant
Construction phase					
Visual and noise disturbance	Low to medium	Short term	Negligible	Negligible	Not significant
Indirect impacts via loss/disturbance to habitats and prey	Low to medium	Short term	Negligible	Negligible	Not significant
Pollution incidents	Low to medium	Short term	Negligible	Negligible	Not significant
Operational phase (repair)					
Visual and noise disturbance	Low to medium	Short term	Negligible	Negligible	Not significant
Indirect impacts via loss/disturbance to habitats and prey	Low to medium	Short term	Negligible	Negligible	Not significant
Pollution incidents	Low to medium	Short term	Negligible	Negligible	Not significant
Decommissioning phase (cable removal)					
Visual and noise disturbance	Low to medium	Short term	Negligible	Negligible	Not significant
Indirect impacts via loss/disturbance to habitats and prey	Low to medium	Short term	Negligible	Negligible	Not significant
Pollution incidents	Low to medium	Short term	Negligible	Negligible	Not significant

9.15 Next Steps

9.15.1 A desk-based review is deemed sufficient to enable characterisation of the baseline and to allow a robust assessment of the potential impacts on offshore ornithology. No further site-specific surveys are deemed necessary for incorporation into the ES.

9.15.2 Statutory and non-statutory consultations and ongoing engagement with relevant stakeholders will inform the offshore ornithology assessment presented within the ES.

9.15.3 Where possible, a construction phase works schedule will be developed to avoid works in the vicinity of Lundy during the breeding season.

9.16 References

Bradbury, G., Trinder, M., Furness, B., Banks, A.N., Caldow, R.W.G. and Hume, D. (2014). *Mapping seabird sensitivity to offshore wind farms*. PLoS ONE 9:e106366.

Burnell, D., Perkins, J. A., Newton, S. F., Bolton, M., Tierney, D., and Dunn, T. E. (2023) *A census of breeding seabirds in Britain and Ireland (2015–2021)*

The Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (as amended)

Cleasby, I.R., Owen, E., Wilson, L.J. and Bolton, M. (2018). *Combining habitat modelling and hotspot analysis to reveal the location of high density seabird areas across the UK*: Technical Report. RSPB Research Report no. 63. RSPB Centre for Conservation Science, RSPB, The Lodge, Sandy, Bedfordshire, SG19 2DL.

Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. and Gregory, R., 2015. *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds, 108(12), pp.708-746.

Furness, R. W., Wade, H. M., & Masden, E. A. (2013). *Assessing vulnerability of marine bird populations to offshore wind farms*. Journal of environmental management, 119, 56-66.

Furness, R.W. (2015). *Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS)*. Natural England Commissioned Reports, Number 164.

Humphreys, E. M., Austin, G. E., Frost, T. M., Mellan, H. J., Boersch-Supan, P., Burton, N. H. K., & Balmer, D. E. (2020). *Wader populations on the United Kingdom's open coast: results of the 2015/16 Non-Estuarine Waterbird Survey (NEWS-III) and a review of population trends*. Bird Study, 67(3), 371-384.

ICES. (2022). *Celtic Seas Ecoregion – Ecosystem overview*. In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, Section 7.1, https://doi.org/10.17895/ices.advice.21731615

JNCC (2022). *Joint SNCB Interim Displacement Advice note*.

Kober, K., Webb, A., Win, I., Lewis, M., O'Brien, S., Wilson, L.J. & Reid, J.B. (2010). *An analysis of the numbers and distribution of seabirds within the British Fishery Limit aimed at identifying areas that qualify as possible marine SPAs*, JNCC Report No. 431. JNCC, Peterborough, ISSN 0963-8091.

Parsons, M., Bingham, C., Allcock, Z. & Kuepfer, A. (2019). *Summary of evidence of aggregations of Balearic shearwaters in the UK up to 2013*. JNCC Report No. 642, JNCC, Peterborough, ISSN 0963-8091.

Statutory Nature Conservation Bodies (2022) Joint SNCB Interim Displacement Advice Note

Stone, C.J., Webb, A., Barton, C., Ratcliffe, N., Reed, T.C., Tasker, M.L., Camphuysen, C.J. & Pienkowski, M.W. (1995). *An atlas of seabird distribution in north-west European waters*. Joint Nature Conservation Committee, Peterborough

Waggitt, J. J., Evans, P. G., Andrade, J., Banks, A. N., Boisseau, O., Bolton, M., & Hiddink, J. G. (2020). *Distribution maps of cetacean and seabird populations in the North-East Atlantic*. Journal of Applied Ecology, 57(2), 253-269.

Woodward, I., Thaxter, C. B., Owen, E., & Cook, A. S. C. P. (2019) *Desk-based revision of seabird foraging ranges used for HRA screening*. BTO research report number 724. Thetford.