



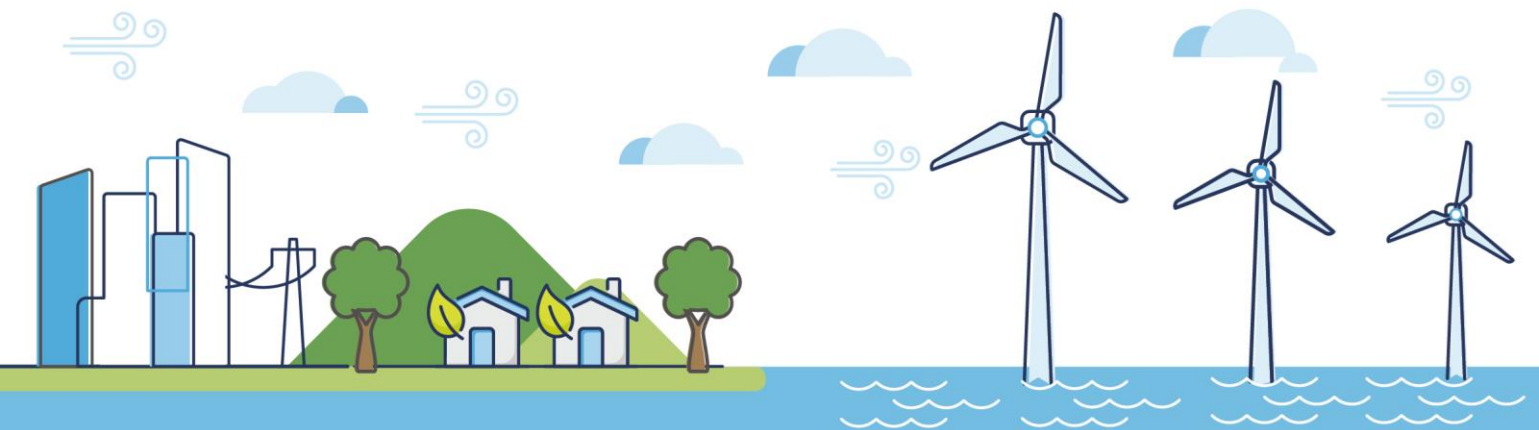
Morecambe Offshore Windfarm: Generation Assets Examination Documents

Volume 9

Response to Republic of Ireland Department of Housing, Local Government and Heritage

Document Reference: 9.29

Rev 01



Document History

Doc No	MOR001-FLO-CON-ENV-RPT-0158	Rev	01
Alt Doc No	PC1165-RHD-EX-XX-RP-Z-0004		
Document Status	Approved for Use	Doc Date	26 November 2024
PINS Doc Ref	9.29	APFP Ref	n/a

Rev	Date	Doc Status	Originator	Reviewer	Approver	Modifications
01	26 November 2024	Approved for Use	Royal HaskoningDHV	Morecambe Offshore Windfarm Ltd	Morecambe Offshore Windfarm Ltd	n/a

Contents

1	Introduction	9
2	Meath County Council Response	9
2.1	Cumulative Effects Assessment – renewables projects in the West Irish Sea	9
2.1	Habitat Regulations Assessment.....	10
2.2	Timing of construction activities.....	10
2.3	Shipping and Navigation	10
2.4	Seascape, landscape and visual impacts.....	11
2.5	Commercial Fisheries.....	11
2.6	Mitigation.....	12
2.7	Decommissioning.....	12
3	Bird Watch Ireland Response.....	13
4	References.....	23

Tables

Table 3.1 The Applicant's Response to Bird Watch Ireland	14
--	----

Glossary of Acronyms

AEol	Adverse effect on integrity
AfL	Agreement for Lease
CEA	Cumulative Effects Assessment
CRNRA	Cumulative Regional Navigational Risk Assessment
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ETG	Expert Topic Group
ExA	Examining Authority
HAT	Highest Astronomical Tide
MNEF	Marine Navigation Engagement Forum
NISA	North Irish Sea Array
NRA	Navigational Risk Assessment
OSP	Offshore Substation Platform
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
SPA	Special Protected Area
UK	United Kingdom
WTG(s)	Wind turbine generator(s)

Glossary of Units

km	kilometre
km ²	square kilometre

Glossary of Terminology

Agreement for Lease (AFL)	Agreements under which seabed rights are awarded following the completion of The Crown Estate tender process.
Applicant	Morecambe Offshore Windfarm Ltd
Application	This refers to the Applicant's application for a Development Consent Order (DCO). An application consists of a series of documents and plans which are published on the Planning Inspectorate's (PINS) website.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables would be present.



The future of renewable energy

A leading developer in Offshore Wind Projects

1 Introduction

1. This document has been prepared in response to the Regulation 32 – Consultation from the Republic of Ireland submitted in the pre-examination period on the 22 October 2024 (OD-008). Morecambe Offshore Wind Ltd (the Applicant) has reviewed each point made by both Meath County Council and Bird Watch Ireland who have responded to the consultation carried out by the Department of Housing, Local Government and Heritage.

2 Meath County Council Response

2.1 Cumulative Effects Assessment – renewables projects in the West Irish Sea

2. The Applicant has undertaken a cumulative effects assessment (CEA) in line with the Planning Inspectorate’s (PINS) Advice Note Seventeen (Planning Inspectorate, 2019), whereby a ‘cut-off date’ is used to facilitate a point in time when available information is incorporated into the CEA. The Applicant notes the submission of the following projects since the CEA was undertaken for the Project:
 - North Irish Sea Array (NISA) Offshore Wind Farm (NISA Wind Farm Ltd.) – 138km from the Project
 - Oriel Wind Farm Project (Oriel Wind Farm Limited) – 155km from the Project
 - Arklow Bank Wind Park 2 (Sure Partners Limited) – 176km from the Project
3. These projects (herein referred to as ‘West Irish Sea projects’) were considered as part of the CEA, and they were categorised as Tier 2 cumulative projects on the basis that no application had been published at the time of the assessment. Given the distances from the Project, the West Irish Sea projects were screened out from the CEA for all topics apart from marine mammals and commercial fisheries on the basis of low data availability or no conceptual or physical effect-receptor pathway. The marine mammals chapter (Chapter 11 Marine Mammals; APP-048) assessed the effect of noise disturbance including considering that four West Irish Sea projects could be constructing at the same time as piling as the project which is considered to be precautionary. The commercial fisheries chapter (Chapter 13 Commercial Fisheries; APP-050) also considered West Irish Sea projects within the cumulative assessment. It is noted that for ornithology (Chapter 12 Offshore Ornithology; APP-049), no data was available but that the West Irish Sea projects used the PEIR data that was available for the Project within their assessments and do not identify any significant effects.

2.1 Habitat Regulations Assessment

4. As noted in Paragraph 88 of the Habitat Regulation Screening Report (APP-028), only projects which were reasonably well described and sufficiently advanced to provide information on which to base a meaningful and robust assessment were included in the in-combination assessment. Therefore, the West Irish Sea projects were not included, as this was not the case at the time the assessment was undertaken.
5. Following screening (Habitats Regulations Assessment Screening Report (APP-028)), a Report to Inform Appropriate Assessment (APP-027) was produced concluding no adverse effects to integrity either alone or in-combination with other plans and projects. This is in line with the West Irish Sea projects that also conclude no adverse effects on integrity. European sites within Ireland were considered as required in terms of ornithological, fish and marine mammal features. It is noted that observations have been made by Bird Watch Ireland and these are responded to in **Section 3**.

2.2 Timing of construction activities

6. The timings of the construction activities for proposed projects in the Irish Sea (East and West) have been considered by each topic when screening projects into each cumulative effects assessment. The assessments have considered reasonably foreseeable interactions based on available project information at the time of the assessment. The majority of Environmental Impact Assessment (EIA) topics screened out West Irish Sea Projects on the basis of no conceptual or physical effect-receptor pathway. A screening distance of 30km has been used for potential cumulative effects with other projects, which represents where study areas for adjacent projects and developments, defined in a similar way, may intersect. This approach was consulted on, and agreed, with the Expert Topic Groups (ETG) established to advise on benthic ecology, marine sediment and water quality, fish and shellfish and physical processes as part of the Evidence Plan Process (EPP) (Appendix A1 of the Consultation Report Appendices Part 1 (A to C) (APP-016). The West Irish Sea projects lie outside this 30km screening distance.

2.3 Shipping and Navigation

7. The Applicant has carried out extensive shipping and navigation consultation and assessments are provided in Chapter 15 Shipping and Navigation (APP-050), the Navigational Risk Assessment (NRA) (APP-073) and the Cumulative Regional NRA (CRNRA) (APP-074) which was conducted alongside the Mona Offshore Wind Project and Morgan Offshore Wind Project Generation Assets. The study area used in the CRNRA is defined as the region of the east Irish Sea bounded by the Isle of Man to the northwest, and the Welsh and English coasts to the south and east respectively and is approximately 17,800 km². It

is noted that the West Irish Sea projects use different distances as their study areas (ranging from 10 – 50nm), however all projects mentioned above are screened out of the cumulative assessment. It is noted that no significant effects or transboundary effects are identified for the West Irish Sea projects.

8. It is noted that there are differences to the effects from the Mona and Morgan projects as well as contribution to cumulative effects. No Project-alone impacts have been identified to be significant in relation to the Project. Routes to the Republic of Ireland are not impacted by the Project. The location of the Project also means contribution to cumulative effects is low. The only significant effect that is identified cumulatively, where the Project is considered to have a contribution is the Stena Line ferry route from Liverpool to Belfast in adverse weather, but again contribution from the project is considered low.

2.4 Seascape, landscape and visual impacts

9. The Project has considered visual impacts from cumulative projects in the west Irish Sea. As presented in Chapter 18 Seascape, Landscape and Visual (APP-055), the Project used a seascape, landscape and study area of 60 km, which was based on an analysis of the Zone of Theoretical Visibility (ZTV) (Figure 18.5) (APP-105). This study area is based on best practice guidance and the possibility of significant effects at a distance of up to 60km from the Project was agreed with the Planning Inspectorate during Scoping (ID 3.12.1). The Planning Inspectorate also noted in its Scoping Opinion (ID 3.12.4) in relation to potential transboundary seascape effects that *“the Inspectorate agrees that effects on an EEA State are unlikely and this matter can be scoped out of further assessment”*.
10. All west Irish sea projects are over 138km from the Project and were screened out from the CEA for the seascape, landscape and visual impact assessment (SLVIA) on the basis of there being no effect-receptor pathway and there being agreement with the Planning Inspectorate that transboundary effects were unlikely. Due to the very long separation distances of the projects in the west Irish Sea (noted in **Paragraph 2**) and lack of intervisibility with the Project at such range, the Applicant is strongly of the view that there is no potential for likely significant cumulative seascape, landscape and visual impacts and further assessment is not required.

2.5 Commercial Fisheries

11. The Applicant has undertaken an assessment of commercial fisheries, as presented in Chapter 13 Commercial Fisheries (APP-050) and Commercial Fisheries Technical Report (APP-072).
12. Effects on biological resources could occur over a range of tens of kilometres and could therefore interact with the Republic of Ireland. Based on the minor

to negligible residual significance of disruption to commercial species during all phases of the Project, it is expected that the impact on stocks in Irish waters would be low. This is informed by the location of the main king scallop and queen scallop grounds, which are found in Irish waters. Transboundary effects in relation to commercial fisheries are concluded to be minor adverse and not significant in EIA terms.

13. Effects on commercial fishing fleets from the Republic of Ireland in terms of reduction in access to grounds within the Project windfarm site and displacement into alternative grounds, are unlikely given the lack of vessel activity within the Project windfarm site. The potential transboundary impact of constraints on foreign commercial fishing activities is concluded to be of negligible adverse significance and is therefore considered to be not significant in EIA terms.
14. As noted in Chapter 13 Commercial Fisheries (APP-050) and the In Principle Monitoring Plan (APP-148) monitoring of fishing activity has also been committed to by the Applicant.

2.6 Mitigation

15. The Applicant has undertaken design changes during the development of the Project, including a reduction in the red line boundary and an increase in blade clearance to reduce impacts to ornithological receptors and other sea users. Further mitigation secured is outlined in the Schedule of Mitigation (APP-144). Mitigation includes standard measures as well as those identified as part of the EIA. As a result of the mitigation no significant transboundary effects are identified. It is also noted the Applicant has worked collaboratively with the Mona and Morgan projects, with joint initiatives such as the Marine Navigation Engagement Forum (MNEF) and extensive combined engagement with Shipping and Navigation stakeholders.

2.7 Decommissioning

16. Section 105(2) of the Energy Act 2004 requires the Morecambe Generation Assets to be decommissioned at the end of the operations and maintenance phase. No offshore decommissioning works will take place until a written decommissioning programme has been approved by the Secretary of State for the Department for Energy Security and Net Zero (DESNZ). In addition, Requirement 8 (Schedule 2, draft Development Consent Order (PD-002)) requires a written decommissioning programme to be submitted to the Secretary of State prior to commencement of offshore works. The scope of the decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning.

3 Bird Watch Ireland Response

17. The Applicant has responded to each point raised by Bird Watch Ireland in **Table 3.1.**

Table 3.1 The Applicant's Response to Bird Watch Ireland

ID	Comment	Response
BWI-001	<p>The findings in the Morecambe Offshore Windfarm: Generation Assets Volume 4 Report to Inform Appropriate Assessment document state that no significant effects will occur to any Irish seabirds due to the development; however, BirdWatch Ireland has the following concerns, which we believe should be addressed.</p>	<p>The Applicant notes this response. Please see detailed responses below.</p>
BWI-002	<p>Firstly, the analysis of transboundary impacts of the Morecambe Offshore Windfarm looked at each SPA on its own, assessing impacts to that SPAs population of the critical seabirds individually. We feel this approach is insufficient as it fails to take the ecosystem-based approach. We therefore would recommend a metapopulation approach in order to better understand the potential impacts to the seabirds utilising the marine ecosystem of the Irish Sea as a whole. For example, the seabirds from Irish SPAs individually assessed the most are Fulmar (16 site assessments), Kittiwake (7 site assessments), and Puffin, Manx Shearwater, and Cormorant (5 site assessments each). Within the 7 individual Irish SPA site assessments that assessed Kittiwakes, all were found to be within maximum foraging range for kittiwakes to the proposed development site and the annual total of breeding adult kittiwakes</p>	<p>The Applicant notes Bird Watch Ireland's comment on this matter. The assessment presented in the RIAA (APP-027) has been undertaken in accordance with current UK best practice (see Section 12.4 of Chapter 12 Offshore Ornithology (APP-049) for relevant policy, legislation and guidance). For each of the seven Irish sites where effects on the kittiwake qualifying feature have been assessed, the predicted increase in background mortality is significantly below 1% (the highest value is estimated to be 0.04% for Lambay Island, Howth Head Coast and Ireland's Eye SPAs). This threshold of mortality increase is considered to be below a threshold that would be detectable against background variation, and for that reason would not contribute to in-combination effects.</p> <p>A summary of the kittiwake mortality estimates for the seven Irish SPAs is provided below. This confirms that the total kittiwake mortality apportioned to Irish SPAs would be 1.1 birds (not seven birds, as the Bird Watch Ireland comment suggests). This would result in an increase in background mortality across the seven SPAs of 0.02%, which is significantly below a threshold that could be detected at a population level. It is also worth noting that the estimates presented in the assessment are considered precautionary (i.e. likely to be an overestimate). This low level of mortality would be expected, given the distance from the Project to Irish SPAs, and the relatively low numbers of kittiwakes recorded at the Project site. Even the closest site (Lambay Island SPA) is beyond the mean maximum foraging range for kittiwake (156km; Woodward <i>et al.</i>, 2019), so it is expected that few (if any) birds from this SPA would occur at the Project site during the breeding season. Outside of the breeding season, birds would be</p>

ID	Comment	Response																																													
	<p>were assessed to be less than 1 bird at each site. The Morecambe Offshore Windfarm: Generation Assets Volume 4 Report to Inform Appropriate Assessment concludes that there is 'no potential for the Project to have an adverse effect on the integrity' at each of these Irish SPAs based on the assumed loss of less than 1 bird at each site; however, Ireland's Kittiwake breeding population is in decline at -36% [5] and its reported status overall has changed from 'Unknown' in 2020 to currently 'GES not achieved' in Ireland's Marine Strategy (established under the Marine Strategy Framework Directive). While losing less than 1 bird may not affect an individual site significantly, the potential combined losses of 7 birds annually in the total Irish breeding population could exacerbate the overall decline of Kittiwakes at a national level. We would suggest that further assessment of the transboundary effects of windfarm developments on seabirds in the Irish Sea should take a metapopulation approach to better understand the combined impacts of these developments on both the populations within the relevant SPAs and the overall national and international populations.</p>	<p>widely dispersed through the Irish Sea and beyond, and therefore the chance of Irish SPA birds occurring at the Project site would be low.</p> <p><i>Predicted kittiwake mortality apportioned to Irish SPAs</i></p> <table border="1" data-bbox="891 405 2029 1015"> <thead> <tr> <th></th> <th>Annual kittiwake mortality apportioned to SPA</th> <th>SPA reference population (adult birds)</th> <th>Background mortality (adult mortality rate = 0.146; Horswill and Robinson, 2015)</th> <th>% increase in background mortality</th> </tr> </thead> <tbody> <tr> <td>Lambay Island SPA</td> <td>0.38</td> <td>6,640</td> <td>969</td> <td>0.04%</td> </tr> <tr> <td>Howth Head Coast SPA</td> <td>0.38</td> <td>6,162</td> <td>900</td> <td>0.04%</td> </tr> <tr> <td>Ireland's Eye SPA</td> <td>0.17</td> <td>3,220</td> <td>470</td> <td>0.04%</td> </tr> <tr> <td>Wicklow Head SPA</td> <td>0.07</td> <td>1,348</td> <td>197</td> <td>0.04%</td> </tr> <tr> <td>Saltee Islands SPA</td> <td>0.05</td> <td>1,690</td> <td>247</td> <td>0.02%</td> </tr> <tr> <td>Horn Head to Fanad Head SPA</td> <td>0.02</td> <td>7,706</td> <td>1,125</td> <td>0.00%</td> </tr> <tr> <td>Cliffs of Moher SPA</td> <td>0.03</td> <td>8,552</td> <td>1,249</td> <td>0.00%</td> </tr> <tr> <td>Total</td> <td>1.10</td> <td>35,318</td> <td>5,156</td> <td>0.02%</td> </tr> </tbody> </table> <p>Overall, the Applicant considers that the presented assessments are robust and confirm that adverse effects on the Irish SPAs (whether considered for the Project alone, or as a contribution to in-combination effects) would not occur. The Applicant does not consider that further assessment is warranted for these sites.</p>		Annual kittiwake mortality apportioned to SPA	SPA reference population (adult birds)	Background mortality (adult mortality rate = 0.146; Horswill and Robinson, 2015)	% increase in background mortality	Lambay Island SPA	0.38	6,640	969	0.04%	Howth Head Coast SPA	0.38	6,162	900	0.04%	Ireland's Eye SPA	0.17	3,220	470	0.04%	Wicklow Head SPA	0.07	1,348	197	0.04%	Saltee Islands SPA	0.05	1,690	247	0.02%	Horn Head to Fanad Head SPA	0.02	7,706	1,125	0.00%	Cliffs of Moher SPA	0.03	8,552	1,249	0.00%	Total	1.10	35,318	5,156	0.02%
	Annual kittiwake mortality apportioned to SPA	SPA reference population (adult birds)	Background mortality (adult mortality rate = 0.146; Horswill and Robinson, 2015)	% increase in background mortality																																											
Lambay Island SPA	0.38	6,640	969	0.04%																																											
Howth Head Coast SPA	0.38	6,162	900	0.04%																																											
Ireland's Eye SPA	0.17	3,220	470	0.04%																																											
Wicklow Head SPA	0.07	1,348	197	0.04%																																											
Saltee Islands SPA	0.05	1,690	247	0.02%																																											
Horn Head to Fanad Head SPA	0.02	7,706	1,125	0.00%																																											
Cliffs of Moher SPA	0.03	8,552	1,249	0.00%																																											
Total	1.10	35,318	5,156	0.02%																																											
BWI-003	<p>Secondly, we recognise that the cumulative approach has been taken for assessing the impacts to seabirds from the three other proposed wind farms within UK's waters;</p>	<p>The Applicant highlights that the cumulative effects assessment considered windfarms in the Irish EEZ including Arklow Bank Phase 1, Braymore, North Irish Sea, South Irish Sea, Clogher Head/Cooley Point, Codling, Oriel, Dublin Array and Kilmichael Point (Table 12.54 of ES Chapter 12 (APP-049)). However, given the pre-planning/concept</p>																																													

ID	Comment	Response
	<p>however, we would request that future cumulative impacts include all proposed wind farm developments within the Irish Sea, including those in the Irish EEZ in order to have a more comprehensive understanding of the totality of the potential impacts to seabirds utilizing this marine ecosystem.</p>	<p>status there was no data available to include in the CEA (following the approach proposed in PINS Advice Note Seventeen (PINS, 2019)). As is standard practice in EIA, it will be for those projects to consider the cumulative effects once details of the projects are known. Arklow Bank Phase 1 is due to be decommissioned from 2029 so this was excluded on the basis there would be no temporal overlap with Morecambe operation.</p> <p>In respect of Codling, North Irish Sea, Oriel and Arklow Bank Phase 2 the conclusions reached as part of the cumulative and in-combination assessments in the applications for these projects (which have now been submitted) highlight no significant effects (EIA) or Adverse Effects on Integrity (HRA). These results would not impact the conclusions of the Project.</p>
BWI-004	<p>Additionally, Rockabill SPA is not included in the assessment of Irish SPAs. We understand why the NWIS SPA might not be included due to its relatively recent designation (see above for more details), but the lack of inclusion of the Rockabill SPA is a significant oversight due to the importance of this site for Roseate terns (<i>Sterna dougallii</i>), Common terns, Arctic terns, and Kittiwakes. Roseate terns in Ireland are not assessed in any of the documentation found in the Morecambe Offshore Windfarm proposed development, despite Rockabill hosting the largest colony of Roseate terns in Europe. The majority of the North West European population is found at just three colonies: Rockabill SPA (Dublin), Lady's Island Lake SPA (Wexford), both in the Irish Sea, and Coquet Island SPA (Northumberland) in the English North Sea. Together these sites act as a metapopulation; Rockabill is the main source population and the other two are</p>	<p>The Applicant notes Bird Watch Ireland's comments.</p> <p>In respect of Rockabill SPA, this site was screened out from assessment within the RIAA (APP-027) as the Project lies beyond the published breeding foraging range for the tern species associated with the SPA, and therefore there is no connectivity during the breeding season. During the non-breeding season these species migrate to and from their wintering grounds. No roseate terns were recorded during site surveys, and both Arctic and common terns were recorded in low numbers. The total predicted annual collision mortality for these latter species was estimated at 0.37 and 0.22 birds respectively. These values are considered precautionary, and once apportioned to individual SPAs would be substantially less. It is very unlikely that any measurable collision mortality would affect these species from Rockabill SPA or any other SPA population.</p> <p>All three tern species are considered to have a low risk of collision mortality (e.g. as predicted by Furness <i>et al.</i>, 2013). The risk to migratory species is also substantially less than for species that are resident within an area, as there would only be one or two (depending on pre-and post-breeding migration routes) potential passages through a windfarm site annually, as opposed to potential regular occurrence around the windfarm site for resident species. The migration routes through the Irish Sea by Arctic and Roseate terns highlighted by Bird Watch Ireland are noted, but it remains the case that this represents small numbers of birds passing along a broad migration front on an</p>

ID	Comment	Response
	<p>more often sinks, especially when the subpopulations nesting at Coquet and Lady's Island Lake were lower and 'recovering'. This situation may be recurring now given the recent (2022-23) outbreak of HPAI-H5N1 that disproportionately impacted Coquet Island SPA. There is continual inter-connection between the three, with individuals emigrating from one site and recruiting (to breed) at another. This inter-colony movement is illustrated by Redfern et al. (2020a).</p>	<p>infrequent (i.e. annual or biannual) basis. The chances that these species would encounter the Project site are therefore very low. For any birds that do encounter the windfarm, the risk of collision mortality is also very low, as a small proportion of birds from these species fly at a height where collision is possible, and the species are highly agile, so any birds flying within the rotor zone would be expected to show very high levels of avoidance. It should also be noted that the Applicant has sought to minimise collision risk through an increase in air gap to 25m from 22m above Highest Astronomical Tide (HAT). Combined, the low risk factors indicate that there would be close to zero mortality risk for birds from these SPAs.</p> <p>It is noted that the Applicant has undertaken a separate migrant seabird collision risk assessment within ES Chapter 12 Offshore Ornithology (APP-049; paragraphs 12.305 to 12.312 and Tables 12.51 and 12.52). This predicted no measurable increase in mortality for any migrant seabird species.</p>
BWI-005	<p>Significantly, the movement (autumn/spring migration) of Roseate terns to and from Coquet Island is largely oriented northeast-southwest overland (Northern England) rather than via the sea corridor of the North Sea. The majority of tagged birds are passing through the northeast Irish Sea lying between the Isle of Man, Cumbria and North Wales, with several moving through Morecambe Bay itself. This research clearly illustrates the importance of the Irish Sea for Roseate terns moving between these three colonies.</p>	<p>In terms of kittiwake, this is not a qualifying feature of Rockabill SPA (https://www.npws.ie/protected-sites/spa/004014), and therefore it would not be considered within the Habitats Regulations Assessment, and is not included in the RIAA (APP-027).</p> <p>As Bird Watch Ireland has stated, the North West Irish Sea SPA has only recently been designated, and was not therefore included within the RIAA (APP-027). However, the Applicant notes that this site was designated to provide supporting habitat to breeding seabird SPAs along the Irish coast. Given the distance between the SPA and the Project site, there are no mechanisms or pathways arising from the Project likely to affect these supporting habitats. Therefore, the Applicant considers that there would be no likely significant effect on this SPA, and no requirement for an appropriate assessment. It is noted that the seabird populations that the SPA supports have been assessed as part of their respective SPA breeding colonies.</p>
BWI-006	<p>We are concerned that this internationally important and rare European, Red-listed species was not identified as a species of interest and at risk in the surveys, literature reviews, consultations and environmental assessments of the project. BirdWatch Ireland finds this a significant oversight and</p>	

ID	Comment	Response
	<p>would request that the impacts of the Morecambe Offshore Windfarm and all future developments in the Irish Sea consider impacts to Roseate Terns and the connections between these important colonies.</p>	
BWI-007	<p>Also, we know from geolocator tracking data for Arctic Terns that the Irish Sea is an important staging area for birds leaving the UK in autumn (August-September) and arriving in spring. Redfern et al. (2020b) refer to overland migration of Arctic terns heading to and from the large Northumberland colonies of the Farne Islands and Coquet Island SPA, where the birds were tagged. As geolocator accuracy may be up to +/- 50 km, these birds may well be using Morecambe Bay coastal waters at some stage. Although parts of Morecambe Bay are designated as SPAs, there are several windfarms already operating in this part of the Irish Sea. We would request that further assessment be done for Arctic Terns in the Irish Sea due to their migration patterns which could put them at risk of collision and displacement from offshore energy development</p>	
BWI-008	<p>Finally, the Scoping Report for the Morecambe Offshore Windfarm states that 'birds are considered to be most at risk from disturbance when they are resident in an area at any time of year, as opposed to birds on passage during migratory</p>	<p>The Applicant refers to the response above in respect of effects on migratory species. An assessment of the effects on migratory non-seabird and seabird species is presented in ES Chapter 12 Offshore Ornithology (APP-049; Paragraphs 12.295 to 12.312). No measurable change in mortality has been identified for any migratory species.</p>

ID	Comment	Response
	<p>seasons'. We welcome the addition of 'at any time of year' to the definition of resident bird species given the importance of the Irish Sea to both breeding and wintering assemblages of birds; however, we concur with the Scoping Opinion - we are unsure of the evidence of this statement. The effects on migratory birds must be fully considered when assessing the potential impacts to birds from this proposed development and should be assessed along with the effects on breeding and wintering assemblages. Migratory birds often fly at higher elevations, and therefore could be more impacted by the development of wind farms, particularly when it comes to collisions [12].</p> <p>The Morecambe Offshore Windfarm: Generation Assets Environmental Statement Volume 5 Non-Technical Summary (PINS Document Reference 5.1) also states that 'the risk to seabirds from cumulative displacement and collision is assessed as no greater than minor adverse significance for all species, with the exception of Great black-backed gull'; however, no data or justification is given for this statement. The Scoping Opinion also highlights the lack of justification for potential transboundary impacts during construction and decommissioning and asks for this or an assessment of</p>	<p>In respect of the cumulative effects on seabird species, this is assessed in detail within Section 12.7 of ES Chapter 12 Offshore Ornithology (APP-049). This provides numerical assessment of mortality for all relevant species (including great black-backed gull), and sets out the justification for the assessment conclusions. This level of detail is necessarily not included within the non-technical summary.</p> <p>The transboundary assessment is focussed on the likely operation and maintenance phase effects of the Project. This is because the construction and decommissioning phases will have limited spatial and temporal overlap with other projects (both at a UK and transboundary level), and therefore the risk of significant cumulative effects is low.</p>

ID	Comment	Response
	<p>transboundary impacts to birds to be included. We would second this request. Indeed, the UK is a party to the Convention on the Conservation of Migratory Species and has agreed to measures to protect migratory species including birds.</p>	
<p>BWI-009</p>	<p>Conclusion:</p> <p>With an increase in the amount of proposed renewable development in the Irish Sea, from within Ireland and outside Irish borders, transboundary impacts and the cumulative effect these projects may have on birds needs to be better understood and planned for. The migratory nature of seabirds and the large size of their ranges make it possible that the populations of seabirds within the Irish sea intermix and are inter-connected between the countries; this should be further studied in order to understand how transboundary impacts could affect the overall populations of seabird species utilizing these waters. Given the amount of offshore renewable development planned in the Irish Sea, we at BirdWatch Ireland ask for a comprehensive transboundary assessment to be completed before the application goes any further. One central issue for the Morecambe Offshore Windfarm proposal is whether the increase in turbines and expansion of windfarm development in the Irish Sea will have an effect where the birds are being squeezed into ever smaller areas</p>	<p>As set out above, the Applicant considers that the assessments presented in ES Chapter 12 Offshore Ornithology (APP-049) and the RIAA (APP-027) have provided comprehensive assessment of likely transboundary effects, in accordance with current best practice and the best currently available evidence. The Applicant does not consider that further assessment is justified or required.</p> <p>The EIA scale assessment considers the effects on seabird populations at the Biologically Defined Minimum Population Scales (BDMPS), as defined by Furness (2015). The seasonal BDMPS for each species include populations from both UK and non-UK breeding populations that may be present at the windfarm site, and therefore recognises the intermix of populations from different countries.</p> <p>The cumulative, in-combination and transboundary assessments presented in ES Chapter 12 Offshore Ornithology (APP-049) and the RIAA (APP-027) have been undertaken in accordance with current UK best practice. The Applicant considers that the assessments are robust and are supported by the best available information, but noting, as set out in the response above, that we are unable to assess future projects for which no data is available. It will be for those projects to consider cumulative/in-combination effects at the time that consent applications for those projects are brought forwards.</p>

ID	Comment	Response
	<p>in both Morecambe Bay and Irish waters. To answer that we would need evidence on whether seabirds are avoiding other windfarm areas.</p>	
<p>BWI-010</p>	<p>We would also like more information on whether the Morecambe Offshore Windfarm would be in an area likely to be used by foraging seabirds. The potential that windfarms could have positive benefits for fish spawning, increasing prey availability for foraging seabirds, should be explored as it could help mitigate some negative effects of increased offshore development to seabirds. Another possible mitigation we feel should be added to planning is that UK regulators should consider painting at least one turbine blade black as a collision-reduction measure, and request that funding is made available to find out if painting a blade black would lower any risk of collisions with seabirds in the Irish Sea and encourage further tern tracking work to better understand tern migration through the area.</p>	<p>The windfarm site overlaps with Irish Sea spawning grounds for a number of fish species, as set out in Chapter 10 Fish and Shellfish Ecology of the ES (APP-047). Whilst the potential for fish to aggregate around project infrastructure is explored in ES, there is currently no evidence that the Project would be beneficial to the spawning success of fish at the population level. Given that no significant adverse effects are found for fish receptors, no monitoring of fish spawning is proposed.</p> <p>The Applicant is aware of trials and research into the use of painted blades to reduce collision risk, but understands that the evidence of benefit (particularly in the offshore environment) is not strong. The Applicant has provided mitigation to reduce collision risk, through an increase in air gap for proposed turbines from 22m to 25m above highest astronomical tide (HAT). This measure is known to deliver measurable reduction in collision risk.</p> <p>Any monitoring proposals associated with the Project would be required to address key uncertainties within the assessment. As set out above, there is robust evidence to demonstrate that there would be a negligible effect on tern populations, and therefore tern tracking would not be a priority for the Project.</p>
<p>BWI-011</p>	<p>In the Irish waters of the Irish Sea, several windfarm developments are being proposed, and with the proposed Morgan and Mona wind farm developments in UK waters as well as the Morecambe Offshore Windfarm, there is a very genuine possibility that cumulative effects of all these new wind developments could be a serious threat to seabirds that utilize the</p>	<p>Please refer to responses above. The Applicant considers that the cumulative, in-combination and transboundary assessments presented in ES Chapter 12 Offshore Ornithology (APP-049) and the RIAA (APP-027) are robust, and provide sufficient precaution and certainty.</p>

ID	Comment	Response
	<p>marine environment. We fear that assessing each development individually and within a bubble without a cumulative assessment of the totality of all the proposed developments within the Irish Sea risks missing or underestimating impacts to birds and the marine environment and could negatively affect seabirds in the entire Irish Sea marine environment regardless of country boundaries.</p>	
BWI-012	<p>From the evidence presented to us in the supporting documents to the application and the gaps in the identification of seabirds at risk of the proposed development, it is not possible to conclude that there will be no significant adverse impacts to the conservation interests of Irish SPAs and further investigation and mitigation is required.</p>	<p>Please refer to responses above. The Applicant considers that the assessment presented in the RIAA (APP-027) is robust confirms that there would be no risk of an adverse effect on site integrity for any Irish SPAs.</p>

4 References

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

PINS (2019). Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects.

Woodward, I., Thaxter, C.B., Owen, E., Cook, A.S.C.P. (2019). Desk-based revision of seabird foraging ranges used for HRA screening