Awel y Môr Offshore Wind Farm

Category 5: Reports

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Report to Inform Appropriate Assessment,
Annex 2: HRA Screening Update (Ornithology)

RWE Renewables UK
Awel y Môr Offshore Wind Farm

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List of abbreviations

Abbreviation	Definition
AyM	Awel y Môr Offshore Wind Farm
ES	Environmental Statement
GyM	Gwynt y Môr Offshore Wind Farm
HRA	Habitats Regulations Assessment
INNS	Invasive and Non-Native Species
LSE	Likely Significant Effect
NRW	Natural Resources Wales
O&M	Operation and Maintenance
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
RIAA	Report to Inform Appropriate Assessment

1 Introduction

1 In June 2020, RWE Renewables UK Limited (RWE, the Applicant) submitted a Habitats Regulations Assessment (HRA) Screening Report of European Designated Sites for the proposed Awel y Môr offshore wind farm, to relevant interested stakeholders[1].

2 This report has been prepared by GoBe Consultants Ltd (GoBe) on behalf of RWE to incorporate updates associated with the responses received from stakeholders with specific regard to ornithological aspects of the Screening Report. It is submitted for approval by the offshore ornithology Evidence Plan Expert Technical Group, with the anticipation that this document will form the basis for Stage 1 of the Awel y Môr HRA (with regards offshore ornithological features during the breeding season[2]).

3 Key relevant responses that are addressed within this report comprise:

- The SNCBs are recommending use of species-specific mean maximum foraging range + 1 standard deviation (Mean Max +1SD), as presented in Woodward et al. (2019); and
- There are no wintering SPAs in this report except for the Dee. Welsh wintering estuarine SPAs need to be screened in as there is the potential for collision and/or potential barrier effects. This would need to include an assessment of all Welsh wintering estuarine SPAs including, Traeth Lafan SPA, The Dyfi SPA, Burry Inlet SPA and Severn Estuary SPA.

4 This document seeks to present the required information to address both comments. Section 2 addressing the comment with regards mean max foraging ranges, whilst Section 3 addresses the comments with regards migratory birds.

5 Additionally, upon review of the updated screening assessment, SNCBs requested the addition of a number of sites to be screened in for further assessment. These are presented in Table 2, along with all screened in sites and their relevant features and for which impact/s they will be assessed for.

[1] Including Statutory Nature Conservation Bodies, RSPB, Local Authorities, Wildlife Trust, and Regulators.
[2] As this is an update to incorporate a change in metric relevant only to breeding seabirds, other ornithological features are considered in alternative documents (Awel y Môr HRA Screening Report and Screening Update Migratory Non-seabirds).

2 Mean Maximum foraging ranges

2.1 Screening criteria

6 The Awel y Môr HRA Screening Report used a series of criteria to identify impact pathways and screen SPAs and Ramsar sites into Stage 2 of the HRA process (the Appropriate Assessment). The following Criteria were used:

- Criteria 1A – European site(s) within the search area;
- Criteria 1B – European site(s) with supporting, or functionally linked habitat located within the search area;
- Criteria 2 – European site(s) for qualifying mobile species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) may interact with the Project's sphere of influence;
- Criteria 3 – European site(s) with a feature located within the potential range of a Project-effect. Hydrological connectivity (onshore) or indirect linkages could extend this range; and
- Criteria 4 – European site(s) for qualifying species recorded during site specific surveys.

7 Criterion 2 focused on identifying potential connectivity between breeding seabird colonies at SPAs and Ramsar sites and Awel y Môr. Foraging ranges presented in Woodward *et al.*, (2019) were used to identify those colonies within range of the Project, based on a multi-colony analysis of species-specific values.

8 The mean-maximum range was used from the Woodward *et al.*, (2019) review as it provides the average across the maximum foraging distance for each colony included within the study. This is therefore highly precautionary as it used the maximum range as a basis of the calculation for each species and, was deemed appropriate in identifying potential for likely significant effect (LSE). Screening for Criteria 2 is based on birds travelling around major land masses as it is unlikely that birds would travel across land in order to forage offshore.

9 During consultation, Statutory Nature Conservation Bodies advised that in the absence of official guidance on how to interpret the values presented in Woodward *et al.,* (2019), the standard deviation of the mean-maximum foraging ranges should be used. As a result, HRA screening was re-run for ornithological receptors, to incorporate the standard deviation for each of the species-specific foraging ranges (mean maximum foraging range +1 standard deviation (mean max +1 SD), as presented in Woodward *et al.*, (2019)).

10 This report therefore sets out the methods used to update the HRA Screening outcomes as a result of including the standard deviation during the process. Table 2 presents the final screened in sites included for assessment including those requested by SNCBs and the relevant impacts of which these will be assessed for.

2.2 Foraging Ranges

11 The Awel y Môr HRA Screening Report employed the Woodward *et al.,* (2019) publication to inform foraging ranges for breeding seabirds. Foraging ranges allow assessments to evaluate potential connectivity between a project and a seabird colony based on species specific foraging ranges during the breeding season (Criteria 2). Ranges can only be used to inform foraging ranges of birds during the breeding season as this is the only occasion a reliable metric can be determined (as seabirds are central placed foragers and must return the nest site to provision young).

12 Woodward *et al*., (2019) provides the most up-to-date collation of seabird foraging ranges based on multiple individuals from numerous study colonies. The report updates the previous resource, Thaxter *et al.,* (2012). The recent publication includes an increased number of tracking studies (over double the number of records) in comparison to the previous publication. This has enabled a more robust assessment of foraging ranges to be undertaken by the authors and an overall improvement in confidence for many of the species assessed. Woodward *et al*., (2019) also include estimates from great black-backed gull which were not included previously (in Thaxter *et al.,* (2012).

13 The publication presented multiple foraging range values for each species; mean, mean-maximum and maximum, along with the associated standard deviation for each value. The mean-maximum foraging range was used as it is it takes the mean across all maximum foraging ranges considered for that species. This therefore presents a highly precautionary approach to screening of European designated sites for breeding seabirds and is deemed appropriate for establishing where LSE may exist. If a more precautionary method of employing the standard deviation is incorporated a higher number of designated sites will be considered, but their inclusion within the Stage 2 assessment of the HRA will still depend on the likelihood of a LSE. The Applicant agrees with the precautionary principle, and identifying relevant effect-receptor pathways for consideration, but also considers it important to consider pathways where a LSE may exist, rather than all potential pathways, in order to focus the assessment appropriately and to present a proportionate volume of information.

14 Some key differences between Thaxter *et al*., (2012) and Woodward *et al*., (2019) are highlighted below:

- Revised data provides evidence for the following species' foraging range estimates more than doubling; fulmar, Manx shearwater, kittiwake, razorbill, puffin and great skua;
- Revised data provides evidence for the following species' foraging range estimates being very similar; gannet, herring gull, guillemot, and four of the five tern species;
- Lesser black-backed gull and roseate tern have seen a significant reduction in foraging range estimates; and
- Two species with the largest mean-maximum foraging ranges include Manx shearwater and fulmar.

15 Standard deviation shows users how spread data is by expressing by how much values differ from the mean. To apply the standard deviation to the already precautionary mean-maximum foraging ranges vastly inflates the level of precaution and therefore the number of SPAs (or Ramsar sites) which are within a species foraging range.

16 Table 1 provides an overview of Woodward *et al.*, (2019) foraging ranges with and without the addition of standard deviation.

Table 1: Mean-maximum foraging range, standard deviation and mean-max foraging range +1SD of UK breeding seabird species (Woodward *et al.*, 2019).

Species	Mean-max foraging range (km)	Standard deviation (km)	Mean-max +1SD (km)
Common eider	21.5	-	21.5
Red-throated diver	9	-	9
European storm-petrel	336	-	336
Northern fulmar	542.3	657.9	1200.2
Manx shearwater	1346.8	1018.7	2365.5
Northern gannet	315.2	194.2	509.4
European shag	13.2	10.5	23.7
Cormorant	25.6	8.3	33.9
Black-legged kittiwake	156.1	144.5	300.6
Black-headed gull	18.5	-	18.5
Mediterranean gull	20	-	20
Common gull	50	-	50
Great black-backed gull	73	-	73

Species	Mean-max foraging range (km)	Standard deviation (km)	Mean-max +1SD (km)
Herring gull	58.8	26.8	85.6
Lesser black-backed gull	127	109	236
Sandwich tern	34.3	23.2	57.5
Little tern	5	-	5
Roseate tern	12.6	10.6	23.2
Common tern	18.0	8.9	26.9
Arctic tern	25.7	14.8	40.5
Common guillemot	73.2	80.5	153.7
Razorbill	88.7	75.9	164.6
Atlantic puffin	137.1	128.3	265.4
Great skua	443.3	487.9	931.2

2.3 Method

17 To allow an initial overview of potential new sites to be screened in as a result of the foraging ranges plus standard deviation, Criterion 2 (connectivity during the breeding season) was re-screened using the new values presented in Table 1.

18 Table 2 presents the final screened in sites when applying the new foraging ranges to all designated sites.. As mentioned above, foraging ranges in Woodward *et al.,* (2019) can only be applied to birds from their nest site (usually the SPA or Ramsar sites land boundary) during the breeding season and this is the only period where a reliable metric can be determined. Additionally, potential connectivity for waterbirds during migration has been updated as described in Section 3.

19 Each SPA and Ramsar site were considered in turn according to its designated features being within the mean-maximum foraging approach or the mean-maximum foraging approach plus standard deviation. This was conducted using a GIS distance screening exercise, which measured distance around major bodies of land as this represents the likely foraging routes of seabirds.

20 Information on designated features of English SPAs were obtained from the Natural England Designated Sites portal[3]. Scottish SPA information from NatureScot's SiteLink[4]. Northern Ireland SPAs from each SPA citation hosted by the Department of Agriculture, Environment and Rural Affairs (e.g.[5]), and Welsh SPA information from the designated site viewer[6]. Ramsar information was obtained from the JNCC Ramsar information webpage[7]. These resources were checked and confirmed with each relevant stakeholder during the November (2020) ETG meeting (noting NE, JNCC and NRW were present).

21 It is important that transboundary Designated Sites (which are part of the Natura 2000 network) are also given due consideration during the screening process. As a result, Irish SPAs and Ramsar sites were also considered under the same methods as UK sites (with SPA information obtained from the National Parks and Wildlife Service SPA spreadsheet[8], and Ramsar site information from the Ramsar Information Service [9])

22 Other transboundary sites (i.e. in rest of Europe) have not been revisited in this screening update..

2.4 Results

23 The final screened in sites are presented in Table 2. It is important to note that for species such as fulmar and Manx shearwater, almost every SPA in the UK and Ireland where either species is a designated feature was within mean-maximum plus standard deviation. This included colonies on the east coast of Scotland and the west coast of Ireland where birds could in theory travel along the coast to Awel y Môr.

24 Most seabird species are highly unlikely to travel large distances across land and therefore despite Awel y Môr being within foraging range as the crow flies, the coastal route is a significant distance beyond foraging range.

[redacted]

[5] https://www.daera-ni.gov.uk/publications/special-protection-area-copeland-islands

[6] [redacted]

[7] https://jncc.gov.uk/our-work/ramsar-sites/

[redacted]

25 A key outcome of the screening update is the number of SPAs within foraging range when using the standard deviation approach. Many of these SPAs were beyond the mean-maximum value used for each species in the Awel y Môr HRA Screening Report. However, many of these sites were for the species with the most extensive foraging ranges, such as fulmar, Manx shearwater and gannet. For fulmar and Manx shearwater, their sensitivity to the impacts of offshore wind farms are relatively low (Bradbury *et al*, 2014, Furness *et al*., 2013, Diershke *et al.,* 2016, Fliessbach *et al*., 2019) and based on their wide ranging behaviour, are considered to be relatively low risk in HRA terms. However, Manx shearwater have been requested to be screened in for a number of designated sites by NRW as presented in Table 2.

3 Migratory Non-seabird screening update

26 The Awel y Môr HRA Screening report process identified and screened in the Dee Estuary SPA and Ramsar site for wintering wildfowl and wader features. Following the above response from NRW, a number of SPAs and Ramsar sites have been screened into stage two (the Appropriate Assessment) for further consideration with respect to potential collision and/ or barrier effects.

27 The SPA and Ramsar sites that have been screened in for assessment as requested by NRW, are as follows:

- Traeth Lafan SP;
- The Dyfi SPA;
- Burry Inlet SPA;
- Burry Inlet Ramsar;
- Severn Estuary SPA; and
- Severn Estuary Ramsar.

28 Table 2 presents the species and the relevant impact screened in for assessment from these designated sites.

Table 2: Summary of Potential for LSE for Ornithology Features

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
Liverpool Bay/ Bae Lerpwl (UK) SPA	Red-throated diver Common scoter Red-breasted merganser*	Direct disturbance and displacement	Direct disturbance and displacement Barrier effect	Direct disturbance and displacement
	Red-breasted merganser* Common tern Little tern	No LSE	Risk of collision on migration	No LSE
	Little gull	No LSE	Risk of collision	No LSE
The Dee Estuary (UK) SPA (offshore)	Sandwich tern (passage)	No LSE	Direct disturbance and displacement Risk of collision Barrier effect	No LSE
	Common tern Little tern Bar-tailed godwit Redshank Shelduck Teal Pintail Oystercatcher Grey plover Knot Dunlin Black-tailed godwit Curlew	No LSE	Risk of collision on migration	No LSE

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
	Waterbird assemblage			
The Dee Estuary (UK) SPA (onshore)	Little tern Sandwich tern Bar-tailed godwit Redshank (wintering and passage) Shelduck Teal Pintail Oystercatcher Grey plover Knot Dunlin Black-tailed godwit Curlew Waterbird assemblage	Visual and/ or noise disturbance to species	Visual and/ or noise disturbance to species	Visual and/ or noise disturbance to species
Dee Estuary (UK) Ramsar	Redshank (wintering and passage) Shelduck Teal Pintail Oystercatcher Grey plover Knot Dunlin Black-tailed godwit Curlew Bar-tailed godwit	Visual and/ or noise disturbance to species (onshore)	Visual and/ or noise disturbance to species (onshore) Risk of collision on migration (offshore)	Visual and/ or noise disturbance to species (onshore)

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
	Waterbird assemblage			
Anglesey Terns/ Morwenoliaid Ynys Mon (UK) SPA	Sandwich tern Roseate tern	No LSE	Direct disturbance and displacement Risk of collision Barrier effect	No LSE
	Common tern Arctic tern	No LSE	Risk of collision Barrier effect	No LSE
Ribble and Alt Estuaries (UK) SPA	Lesser black-backed gull	No LSE	Risk of collision	No LSE
Ribble and Alt Estuaries (UK) Ramsar	Lesser black-backed gull	No LSE	Risk of collision	No LSE
Morecambe Bay and Duddon Estuary (UK) SPA	Lesser black-backed gull Herring gull Great black-backed gull	No LSE	Risk of collision	No LSE
Morecambe Bay Ramsar	Herring gull Lesser black-backed gull	No LSE	Risk of collision	No LSE
Bowland Fells (UK) SPA and pSPA	Lesser black-backed gull	No LSE	Risk of collision	No LSE
Lambay Island (IE) SPA	Kittiwake Lesser black-backed gull	No LSE	Risk of collision	No LSE
	Guillemot Razorbill Puffin	Direct disturbance and displacement	Direct disturbance and displacement	Direct disturbance and displacement
Ailsa Craig (UK) SPA	Lesser black-backed gull Kittiwake*	No LSE	Risk of collision	No LSE

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
	Gannet	Direct disturbance and displacement	Direct disturbance and displacement Risk of collision	Direct disturbance and displacement
Ireland's Eye (IE) SPA	Kittiwake	No LSE	Risk of collision	No LSE
	Guillemot Razorbill	Direct disturbance and displacement	Direct disturbance and displacement	Direct disturbance and displacement
Howth Head Coast (IE) SPA	Kittiwake	No LSE	Risk of collision	No LSE
Wicklow Head (IE) SPA	Kittiwake	No LSE	Risk of collision	No LSE
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island (UK) SPA	Manx shearwater	Screened in for displacement on a precautionary basis as requested by NRW	Screened in for displacement on a precautionary basis as requested by NRW	Screened in **for displacement on a precautionary basis as requested by NRW**
Copeland Islands (UK) SPA	Manx shearwater	Screened in for displacement on a precautionary basis as requested by NRW	Screened in for displacement on a precautionary basis as requested by NRW	Screened in **for displacement on a precautionary basis as requested by NRW**
Skomer, Skokholm and the Seas off Pembrokeshire/ Sgomer, Sgogwm a Moroedd Penfro (UK) SPA	Kittiwake* Lesser black-backed gull	No LSE	Risk of collision	No LSE
	Puffin Guillemot (non-breeding)* Razorbill (non-breeding)*	Direct disturbance and displacement	Direct disturbance and displacement	Direct disturbance and displacement
	Manx shearwater	Screened in for displacement on a precautionary basis as requested by NRW	Screened in for displacement on a precautionary basis as requested by NRW	Screened in **for displacement on a precautionary basis as requested by NRW**

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
	Storm petrel	Screened in on a precautionary basis as requested by NRW	Screened in on a precautionary basis as requested by NRW	Screened in **on a precautionary basis as requested by NRW**
Rathlin Island (UK) SPA	Puffin*	Direct disturbance and displacement	Direct disturbance and displacement	Direct disturbance and displacement
Saltee Islands (IE) SPA	Kittiwake Lesser black-backed gull	No LSE	Risk of collision	No LSE
	Puffin	Direct disturbance and displacement	Direct disturbance and displacement	Direct disturbance and displacement
Wexford Harbour and Slobs (IE) SPA	Lesser black-backed gull	No LSE	Risk of collision	No LSE
Helvick Head to Ballyquin (IE) SPA	Kittiwake	No LSE	Risk of collision	No LSE
Grassholm (UK) SPA	Gannet	Direct disturbance and displacement	Direct disturbance and displacement Risk of collision	Direct disturbance and displacement
Puffin Island (UK) SPA	Cormorant	Screened in on a precautionary basis as requested by NRW	Screened in on a precautionary basis as requested by NRW	Screened in **on a precautionary basis as requested by NRW**
Traeth Lafan/ Layan Sands, Conway Bay (UK) SPA	Oystercatcher Curlew Great crested grebe Red-breasted merganser	No LSE	Risk of collision on migration	No LSE
Dyfi Estuary/ Aber Dyfi SPA (UK) SPA	Greenland white-fronted goose	No LSE	Risk of collision on migration	No LSE
Burry Inlet (UK) SPA	Shelduck Wigeon Teal Pintail	No LSE	Risk of collision on migration	No LSE

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
	Shoveler Oystercatcher Grey plover Knot Dunlin Curlew Redshank Turnstone Waterbird assemblage			
Burry Inlet (UK) Ramsar	Pintail Oystercatcher Knot Redshank Waterbird assemblage	No LSE	Risk of collision on migration	No LSE
Severn Estuary (UK) SPA	Bewick's swan Dunlin Gadwall Greater white-fronted goose Redshank Shelduck Waterbird assemblage	No LSE	Risk of collision on migration	No LSE
Severn Estuary (UK) Ramsar	Bewick's swan Dunlin Gadwall Greater white-fronted goose Redshank Shelduck Pintail	No LSE	Risk of collision on migration	No LSE

Designated Site	Feature(s) screened in	Potential for likely significant effect		
		Construction	O&M	Decommissioning
	Teal Ringed plover Waterbird assemblage			

*Assemblage feature only

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