RSPB Cymru

Seran Davies
Marine Licensing
Natural Resources Wales

12 October 2022

By email only to:
Marinelicensing@naturalresourceswales.gov.uk

Your Ref: ORML2170

Dear Seran

MARINE AND COASTAL ACCESS ACT 2009: PART 4 MARINE LICENSING
ORML2170 Project Erebus Floating Offshore Wind Farm

Thank you for consulting the RSPB over the additional information for the above application.

Whilst we appreciate the further information provided, the RSPB continues to object to this application. We originally objected to the application on the 15th April 2022 and made further objection to the application regarding wet storage on 7th July 2022.

Offshore Ornithology

Baseline characterisation
The RSPB welcome the clarification and recalculation presented with respect to the baseline characterisation, particularly in respect to the apportioning of unidentified birds. However, some of our concerns, as detailed in Section 3 of Annexe1 of our previous response have not been dealt with, in particular:

- Details of survey timings and how this may influence representativeness of baseline data
- Details as to how autocorrelation was accounted for

Apportioning
While the Applicant has to some extent dealt with the concerns around apportioning of unidentified species, they have not provided any response to the consideration of site-specific tracking foraging range data in apportioning calculations.

Collision Risk
The RSPB welcome the recalculation of gannet collision risk using the recommended values for flight height, flight speed and nocturnal activity factor. However, as detailed in Section 3 of Annexe1 of our previous response we do not agree the breeding season avoidance rate, and furthermore with the approach in the Supplementary Environmental Information Addendum of applying a 70% macro-avoidance correction to the densities prior to carrying out collision risk modelling. This approach follows suggestions in Cook (2021[1]), the recommendations from which have not yet been formally adopted by the SNCBs. Cook (2021) is currently being reviewed and revised by two projects, one

[1] Cook A.S.C.P. (2021) Additional analysis to inform SNCB recommendations regarding collision risk modelling. BTO research report 739

funded by JNCC and one by Natural England. Until these projects have reported, the RSPB do not accept this approach.

The current evidence of a strong macro avoidance of wind farms by gannets, established from observed behaviour, is almost entirely derived from non-breeding birds[2]. The evidence for macro avoidance during the breeding season is limited with the exception of a study of gannets breeding on Helgoland (Peschko et al 2021[3]) in the German North Sea. However, it is unclear from this study what the breeding status of the tracked birds was, or how their behaviour differed from what would have been expected pre-construction as two of the three wind farms were already operational during the first year of tracking. What the study does clearly show is that breeding gannets do fly through offshore wind farms, often showing no avoidance behaviour at all. Below we reproduce Figure 2 from this paper showing tracked gannets' movements in respect to wind farms. While some show clear avoidance others do not and may even be attracted to the wind farm.

In the Cook (2021) report that suggests the application of macro avoidance to baseline densities, the suggestion is based on reviews that do not include this German tracking study, although it does acknowledge that it shows clear differences between individuals in relation to their response to wind farms. The previous gannet recommended avoidance rate was based on 'all gulls' data because no gannet data were available. The evidence of macro avoidance of gulls in response to wind farms is equivocal, so this rate was only calculated from 'within wind farm' avoidance. As gannets can show macro avoidance it therefore was suggested that this was applied to the baseline densities, and then collision risk modelling was carried out using the 'all gull' avoidance rate, so effectively applying avoidance twice. In response to this suggestion Natural England commissioned a further review of gannet avoidance rates, including whether macro avoidance should be incorporated in this way but this has not yet been reported. In the absence of having this report, the recommendations from it should not be acted upon, and the suggestions in Cook (2021) should not be taken up without the context of this review.

Notwithstanding the above, the RSPB does not agree with the approach for two reasons. Firstly, it does not take into account the likely seasonal variation in macro avoidance as described in Section 3 of Annexe1 of our previous response. Secondly, by basing the 'within wind farm' avoidance rate on the 'all gull' rate, it assumes that gannets will have the same 'within wind farm' reactive flight response as gulls. This assumption is very unlikely to be met, as gannets have much lower flight maneuverability than gulls[4].This will result in a lesser ability to make rapid reactions and consequently have a greater risk of collision. This should be reflected in the 'within wind farm' avoidance rate if any further changes are to be made.

Any evidence of macro avoidance should also be seen in the context of recent work in Belgian offshore windfarms that has shown potential habituation to the presence of turbines. This effectively results in lower macro avoidance[5]and so an elevated risk of collision. It is also important to acknowledge that corpses of Northern Gannets with injuries consistent with collisions with

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[2] Dierschke, V., Furness, R. W., Garthe, S. 2016. Seabirds and offshore wind farms in European waters: Avoidance and attraction. Biological Conservation, 202, 59–68.

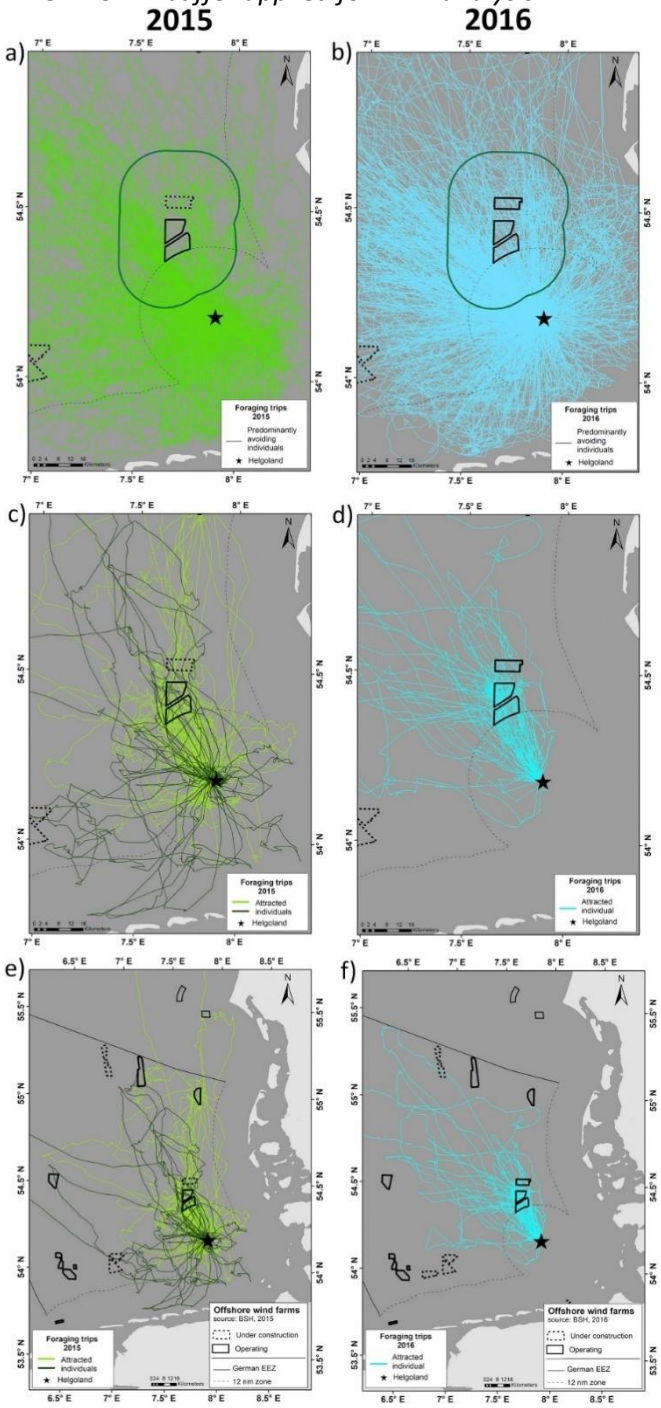
[3] Peschko, V., Mendel, B., Mercker, M., Dierschke, J., & Stefan Garthe, S. (2021) Northern gannets (Morus bassanus) are strongly affected by operating offshore wind farms during the breeding season, Journal of Environmental Management, Volume 279

[4] 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.

[5] Vanermen, N.; Courtens, W.;.; Van de walle, M.; Verstraete, H.; Stienen, E. 2021. Macro-avoidance of GPS-tagged lesser black-backed gulls and potential habituation of auks and gannets. In Degraer, Brabant, Rumes & Vigin (eds) 2021. *Environmental Impacts of Offshore Wind Farms in the Belgian Part of the North Sea, avoidance and habitat use at various spatial scales.* Brussels: Royal Belgian Institute of Natural Sciences, OD Natural Environment, Marine Ecology and Management

offshore wind farms have been recovered (Rothery et al., 2009[6]), and the imperfect detection of these corpses indicate that there may be many more.

"Figure 2": from Peschko et al 2021 showing flight of tagged birds from Heligoland (indicated by a star) in the vicinity of wind farms (outlined in black). Original figure legend is: *"Flight behaviours of gannets tagged in 2015 (n = 10) (a) and 2016 (n = 15) (b) that 'predominantly avoided' the OWFs (all individuals shown in the same colour). Gannets tagged in 2015 (n = 2) (c) and 2016 (n = 1) (d) that were classified as 'attracted individuals' (individuals shown in different colours). (e) & (f) Large-scale movements of individuals shown in (c) and (d). OWFs: dashed black = under construction, solid black = operating, dark green line = 15 km buffer applied for PPM analysis."*



[6] Rothery, P., Newton, I., & Little, B. (2009) Observations of seabirds at offshore wind turbines near Blyth in northeast England, Bird Study, 56:1, 1-14, DOI: 10.1080/00063650802648093

Manx and Balearic Shearwater

We note that the Applicant has not responded to our comments as to the scoping in of potential impacts on Manx and Balearic shearwater. While we acknowledge that NRW and JNCC have not asked for these to be included in the assessment, our concerns, as detailed in as detailed in Section 3 of Annexe1 of our previous response, remain unanswered. In the context of risk of collision for these species, we would also draw attention to the following statement in the confidential ES report[7] drawn up for the Applicant by leading shearwater academic experts that for Manx shearwater, "*the assumption that they always fly close enough to the ocean surface as to be well below the sweep area of wind turbines is probably unsafe"*

Terrestrial and Coastal Ecology and Onshore Ornithology

The applicant has clarified the location of the potential cable landfall options and proximity to designated sites. Although there remains some uncertainty over which cable landfall location will be selected and which working method will be adopted.

Once a final cable landfall location is selected/determined with adequate details, we will comment on methods and mitigation measures with regards to chough.

Wet storage

We remain concerned about the lack of detail and impact assessment of the wet storage and construction areas for the offshore turbines. Construction methods and storage of materials, where they have the potential to have an environmental or ecological impact, should be included within an EIA. Whilst we understand from the developers that currently there are no ports within Wales that are capable of delivering this project at present, the construction and storage impacts that this development may have on the marine ecosystems in certain areas could be extensive and should, in our opinion be factored into the project envelope.

If we are looking at wet storage and construction in at Milford, we need to factor the relevant impact on birds within Haven where turbines could be constructed and stored prior to deployment. We also need to know the impact of wet storage within the marine ecosystem and the biosecurity measures that will be put in place.

Should the developer be looking at Port Talbot we need to know the impact of the construction on the birds that use the Severn Estuary and again the impact of wet storage within the Port on the marine ecosystem and the biosecurity measures that will be put in place.

Economics

Given, as we have been informed by the developer, that there is not currently a port in Wales that can deliver the construction and storage elements of this project as it stands, we would question the weight that can be attributed to the socio-economic chapter of the EIA.

The report does not make clear at which geographic scale the estimates refer, but many of the claimed jobs and Gross Value Added (GVA) effects will be outside Wales. The direct impacts apply estimates of UK content, rather than effects in Wales itself. Therefore, the direct estimates of employment and GVA should be treated as occurring at UK rather than Wales level. However, leakage of 10% is assumed in calculating the net employment – if this is correct then the net effects (rather than the gross effects) can be assumed to apply at Wales level.

[7] Volume 4 (Confidential), Technical Appendix 11.8: Davies K, Padget O, and Guilford T, July 2021. An analysis of Oxnav Manx shearwater tracking data in relation to the Erebus project (University of Oxford)

Multipliers are applied to estimate indirect and induced effects, based on Office for National Statistics (ONS) estimates. These multipliers are at UK level – any indirect effects calculated will be in the UK, but many will be outside Wales. Multipliers at the Wales level are not available, but would be much less than this, as many supplies will be sourced from UK suppliers outside Wales, so money will leak from the Wales economy. Instead of creating 1 extra indirect/induced job per direct job created, a typical regional multiplier might be more like 0.5 indirect/induced jobs per direct job created (i.e. half of the multiplier effect is within the Wales economy and half elsewhere in the UK). The estimated effects on the Wales economy, and especially the indirect effects, are therefore greatly overstated.

It is also not clear how the estimates of GVA have been calculated. The only explanation of the methodology in the report is that a GVA per worker of £67,888 has been applied. If the direct gross job estimate for Capital expenditures (CAPEX) of 715 full-time equivalent (FTE) is used (even though that itself seems to be an overestimate), we would get a GVA estimate of gross direct annual GVA of £48.5 million during the CAPEX stage, less than half of the £117.7 million estimated. The operating expenses (OPEX) GVA estimates also seem to be large overestimates.
Gross direct annual GVA estimates based on gross direct jobs estimated in the report, at £67,888 per FTE:

- CAPEX - £48.5m for 7 years
- OPEX - £9.8m for 24 years
- Decommissioning expenditure (DECEX) - £2.4m for 1 year.

The most likely explanation is that some other ratios have been applied, but these are not given in the report.

Based on the data given in the report, we have made some estimates of net annual effects on employment and GVA in Wales. The following assumptions are made:

- Estimates of CAPEX, OPEX and DECEX are taken from the report
- Estimates of % UK content given in the report are applied, to estimate effects on direct gross output in UK
- Employment and GVA are estimated by annualising expenditures – i.e. CAPEX is divided over 7 years, annual OPEX is £12 million, DECEX takes place over 1 year
- Employment effects are calculated based on the FTE effect (FTE per £ 1 million spend) in the appendices
- Net employment effect is calculated using an additionality ratio of 0.81 as used in the report
- GVA is estimated at GVA per FTE of £67,888
- Indirect/induced effects at Wales (rather than UK) level are estimated at 0.5 x direct effect (standard regional multiplier, in absence of Wales specific multiplier)

This gives the following estimates.

		Employment (FTE)			**GVA (£m)**		
		Direct	**Indirect/ induced**	**Total**	**Direct**	**Indirect/ induced**	**Total**
CAPEX	Annual effect for 7 years	318.1	159.1	477.2	21.6	10.8	32.4
OPEX	Annual effect for 24 years	133.2	66.6	199.9	9.0	4.5	13.5
DECEX	Annual effect for 1 year	34.0	17.0	51.0	2.4	1.1	3.5

The proposed development will **not** create 2,000 jobs or £540m in GVA. A more realistic estimate is that, if we include direct, indirect and induced effects, and consider impacts within Wales only, the proposed development will support:

- 477 jobs and GVA of £32.4m for 7 years in the CAPEX stage, then
- 200 jobs and £13.5m GVA for 24 years in the OPEX stage, then
- 51 jobs and £3.5m GVA for 1 year in the DECEX stage.

These figures should not be summed, as they are annual jobs for different time periods and durations. The figures suggest that the development will still have a large economic impact, but a lot less than claimed in the report.

If you require further information or clarification in relation to any of the issues raised, please do not hesitate to contact me.

Yours faithfully,

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Conservation Officer (Casework)

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