THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010

Outer Dowsing Offshore Wind Farm

Appendix F3 to the Natural England Deadline 4 Submission

Natural England's comments on Offshore Ornithology [REP2-057, REP2-058, REP2-059, REP3-037]

For:

The construction and operation of Outer Dowsing Offshore Wind Farm located approximately 54 km from the Lincolnshire Coast in the Southern North Sea.

Planning Inspectorate Reference EN010130

3rd February 2025

Appendix F3 - Natural England's Advice on documentation submitted and updated related to Offshore Ornithology.

In formulating these comments, the following documents have been considered:

- [REP2-057] 19.8 Levels of precaution in the assessment and compensation calculations for offshore ornithology
- [REP2-058] 19.9 Consideration of bioseasons in the assessment of guillemot
- [REP2-059] 19.10 Rates of displacement in guillemot and razorbill
- [REP3-037] 20.2 The Applicant's Comments on Deadline 2 Submissions Appendix A

1. 19.8 Levels of precaution in the assessment and compensation calculations for offshore ornithology [REP2-057]

Natural England has responded to some of the key matters of dispute raised by the REP2-057 in Table 1 below, relating to Collision Risk Modelling parameters (avoidance rate, nocturnal activity factors, flight speed and height), displacement and mortality rates, and the use of sabbaticals. We have also responded to similar Applicant submissions in previous offshore wind Examinations (for example at Deadline 9 of the Norfolk Vanguard examination, see p23-27 of EN010079-003190-DL9 - Natural England - Deadline Submission.pdf).

However, and as stated within previous discussions for other wind farms, Natural England are of the opinion that the examination phase of a planning application is not an appropriate forum for constructive discussions on the interpretation of the evidence base and its application in best practice for impact assessment. The Natural England/Statutory Nature Conservation Bodies (SNCB) approach to impact assessment is one which takes account of the evidence-poor, high-uncertainty environment within which the assessments are carried out, as well as the requirements of the Habitats Regulations to adopt a precautionary approach. Ultimately this is a matter of ecological judgement and given Natural England's role as the appropriate national conservation body, considerable weight ought to be given to its advice and there should be cogent and compelling reasons for departing from it[1].

Please also refer to Natural England's response to Examiners Questions Q2 OR 1.2.

[1] Akester & Anor (On Behalf of the Lymington River Association), R (on the application of) v Department for Environment, Food and Rural Affairs [2010] EWHC 232 (Admin), para 112

In reference to the Applicant's concern of '*compounding precaution during the assessment, apportioning and compensation calculation process'*, Natural England advise that these represent separate elements of the Habitat Regulation Assessment (HRA) process, the first being the need for precaution within the assessment of impacts to Special Protection Areas (SPAs) (including via apportioning) and the second being the need to consider the efficacy or likelihood of success of the proposed compensation measures, and that both are required to have the requisite confidence that any proposed compensatory measures will result in the Project's impacts being offset within its lifetime. Natural England refers the Applicant and Examining Authority to Appendix G [REP3-071], Natural England Deadline 3 Submission – Natural England's Advice on Seabird Compensation Calculations for further detail on our position regarding the need to address the uncertainty of success of measures within the compensation calculations. We also reiterate our advice in ExA Q2 HRA 2.1 that Natural England has no intention of setting unachievable targets for compensatory measures.

2. 19.9 Consideration of bioseasons in the assessment of guillemot [REP2-058]

The arguments presented by the Applicant within 19.1 Consideration of bioseasons in the assessment of guillemot [REP2-058] centre around three issues or questions. These are; the method of summing predicted mortality levels across seasons, the treatment of impacts during the post-breeding season as displacement rather than a 'one-off diversionary effect' and the appropriate apportioning rates for the post-breeding bioseason. Below sets out Natural England's response and position on each of these elements, with reference to Natural England's Relevant Representations Appendix 2 of Appendix F (RR-045) 'Natural England's additional guidance on the assessment and apportioning of guillemot and razorbill displacement impacts for the Outer Dowsing Offshore Wind Farm', which set out our position in relation to the third element in greater detail.

The summing of predicted mortality levels across seasons:

The Applicant states (section 4, para 10) that precaution is applied to the issue of uncertainty regarding seasonal turnover twice, by both summing seasonal impacts and by apportioning 100% impacts to Flamborough and Filey Coast (FFC) SPA in both the breeding and the post-breeding dispersal bioseasons, because both assume no seasonal turnover. As already acknowledged within the Joint Statutory Nature Conservation Body (SNCB) Interim Displacement Advice Note (2022), the first does indeed assume no seasonal turnover. Natural England do not agree, however, that apportioning 100% of the impacts from the Project in both bioseasons assumes no seasonal turnover. As the reference population for guillemot at

FFC SPA is 149,980 individuals (based on the 2022 count), it is at least theoretically possible that all of the 14,371 guillemot recorded within the array area + 2km buffer in the breeding season (based on the seasonal mean peak abundance of 14,371 as per Table 3.43 in [PD-086] are breeding adults from FFC SPA, that all of the 9,215 guillemot recorded within the array area + 2km buffer in the post-breeding bioseason (using a mean seasonal peak abundance of 9,215) are breeding adults from FFC SPA, and that an unknown proportion of these are different birds.

In fact, Natural England's advised apportioning rate of 68.5% adults from FFC SPA for the post-breeding season (which assumes 68.5% are adults and the remainder are recently fledged chicks, and that of these adults, 90%, not 100% as stated by the Applicant, are from FFC SPA) acknowledges that there is turnover caused by newly produced chicks that had not yet left the cliffs as well as turnover related to some degree of mixing from more northerly colonies. Therefore, the Natural England advised apportioning rates, whilst precautionary in that they assume that all adult birds within the array area during the breeding bioseason and most (90%) of the adult birds in the post-breeding bioseason are from FFC SPA (due to a lack of empirical evidence to support the theory that they are more likely to be from elsewhere), this precaution is addressing a different element of uncertainty than the summing of impacts across bioseasons, rather than replicating it.

Furthermore, Natural England maintain that applying an appropriate degree of precaution to each element of uncertainty in the assessment as listed by the Applicant in paragraph 11 is required in order to establish some level of precaution for the assessment as a whole, as required by the Habitat Regulations. This of course requires careful handling when drawing conclusions regarding the level of impact, which is why Natural England generally takes a range-based approach to considering potential impacts where appropriate, rather than placing undue reliance on a single value.

Treatment of impacts during the post-breeding season as displacement vs a one-off diversionary effect:

The Applicant states (section 4, para 14) that "*the guillemot population using the array area cannot be considered an aggregation during a flightless period*", seemingly because "*there is no concurrent data on whether densities are lower outside the survey area*" and "*there is no evidence from any source that birds linger within the survey area any longer than they do elsewhere*". However, neither has the Applicant provided any evidence to show that densities are not lower outside the survey area, or that birds are not "*lingering within the survey area*".

In other words, the lack of this data in support of aggregations of guillemot within the site does not mean that this "*cannot*" be the case. Indeed there is some evidence indicating that guillemots will aggregate in areas of high concentrations of prey in the post-breeding season, and that "*post-breeding aggregations are particularly found in August over Dogger Bank [and] off East England northwards of Flamborough*" whilst noting that there is "*much uncertainty about local aggregations post-breeding, and where these might be located*" (Furness, 2015). It would therefore appear perfectly plausible that the large numbers of guillemot recorded within the array area in August and September 2021 and August 2023 are aggregations of flightless birds and that these birds are not simply transiting through the site.

The Applicant goes on to conclude that "*the activity must logically be considered to be a migration, with the assumption that birds are simply passing through the site during the post-breeding season*". Again, the Applicant has not presented any empirical evidence to support this theory, and as stated within the SNCB displacement advice note, "*it is hard to define where an individual may have intended to travel to, even using tracking data*" (JNCC, 2022), of which FFC SPA is lacking for auks. It is for this reason that we do not advocate attempting to assess barrier effects separately. Furthermore, as stated within Furness (2015) "*common guillemots in Britain and Ireland are considered to be dispersive rather than migratory (Wernham et al. 2002)"* and that "*many adults remain close to their colony throughout the year (Brown and Grice 2005)*". Without any empirical evidence presented in support of the Applicant's theory that the guillemots present within the array area in August and September are only passing through to areas beyond the array area, and noting the evidence presented and referenced within Furness (2015), Natural England do not agree with the Applicant that "*the effect of the proposed wind farm on birds in the post-breeding season must therefore be a one-off diversion effect rather than displacement*". Furthermore, even if there was evidence to support the theory that guillemots are simply passing through the array area during August and September on their way to winter foraging areas, there is no evidence to indicate how long this process would take, noting that they are flightless for six to seven weeks during this period (Furness, 2015), and therefore this does not preclude them from using the site to rest and/or forage.

Apportioning rates for the post-breeding season:

The Applicant states several times (paras 9 to 11, 13 and 28) that Natural England's advised apportioning rate for guillemot during the post-breeding season (August to September) assumes that all birds within the array during these months are from FFC SPA. This is not the case. As outlined in Appendix 2 in Appendix F of Natural England's Relevant Representations [RR-045], the advised apportioning rate of 68.5% takes into account, as well as the fact that

approximately a third (31.5%) will be chicks, that a proportion (10%) of the adult birds present will be from other colonies to the north of FFC SPA. This rate is considered appropriate due to the supporting evidence as set out in Appendix 2 [Appendix F, RR-045] on connectivity between the Project area and FFC SPA during these months, and the lack of mixing between populations from different colonies during the post-breeding moult (Buckingham et al. 2022); please refer to Appendix 2 [Appendix F, RR-045] for our full reasoning on the advised rate. Overall, the available evidence indicates that the majority of guillemot using this area at this time of year are likely to originate from FFC SPA.

3. Comments on 19.10 Rates of displacement in guillemot and razorbill [REP2-059]

Natural England conducted a detailed review into the APEM (2022) report during the Hornsea 4 examination[2] within which we advised that Natural England's view was that the information provided in the report did not provide justification for the use of a single displacement rate of 50% for auks at Hornsea 4. Many of the points raised within this response are also applicable to Outer Dowsing, including the apparent importance of the area to guillemot and razorbill during the post-breeding months.

Contrary to Applicant's statement that Natural England advise a rate of 70% displacement, we do not advocate for the use of single values in impact assessments, as they run a significant risk of 'false precision'. This is inappropriate given the limitations of the studies on offshore windfarm displacement thus far carried out and the resulting equivocal evidence base as highlighted by the Applicant. Accordingly, Natural England's range-based approach seeks to encompass a range of potential displacement effects as observed in post-construction monitoring studies. This is set out within our Best Practice Guidelines and these were requested specifically for this Project within F23 and F36 of our Relevant Representations [RR-045] and subsequent submissions [REP1-061, REP2-074, REP2-095 and REP3-070]. We do generally use a rate of 70% displacement for calculating compensatory requirements however, due to the desirability of having clear targets for the measures to ultimately deliver.

With regards to the APEM (2022) report, Natural England observes that there are methodological issues with many of the studies cited, not just those reporting more significant displacement effects. This includes, but is not limited to, the use of boat-based surveys, a

[2] Natural England review of G1.47 Auk Displacement and Mortality Evidence Review Revision: 01 For The construction and operation of Hornsea Project Four Offshore Wind Farm Planning Inspectorate Reference EN010098 - EN010098-001249-Natural England - Comments on any other submissions received at Deadline 1.pdf

survey methodology that is no longer considered fit for purpose, the uncertainty around how displacement rates have been calculated, and the distance (i.e. array only, or array + various buffers) over which displacement has been calculated. This last point is likely to be a critical factor in determining whether displacement rates are comparable between projects, since i) displacement effects have been recorded beyond the limits of several of the studies considered by APEM's review (for example up to 9km (Peschko et al. 2020) and 21km (Peschko et al. 2024) in the German North Sea, meaning that these studies have potentially underestimated the level of displacement and ii) displacement rates might be expected to decrease with distance from the impact, in which case studies with larger surveyed areas may have reported lower displacement rates over the total area than would have been reported if the survey area had been tighter.

Furthermore, Natural England remain wary of relying too heavily on direct comparisons between the projects assessed in the APEM (2022) report and current proposed developments including Outer Dowsing, due to differences in windfarm scale, specifically in this case turbine size and array area.

The Applicant also reviews the evidence presented within Lamb et al (2024) and Trinder et al, (2024) in apparent support of their preferred displacement rate of 50% using the results of these studies. With regards to Lamb et al, 2024, this is with reference to the stated magnitude of effect (% change) for auks with upper and lower confidence intervals of 69% and 49% respectively. However, no consideration is given over to what distance the effect has been measured for each of the 16 studies that have contributed to this measurement of magnitude, despite the strong link that Lamb et al (2024) makes between the probability of detecting significant changes in distribution and the size of the study area footprint. The author goes on to state that "*for some species the area impacted by a wind farm may extend beyond the limits of many gradient studies*" and that "*standard monitoring radii of 2-4km may be too small to detect all relevant changes in marine bird communities*". This indicates that the specific rates of magnitude within Table 3 cannot be used in a simplistic way to inform the appropriate displacement rate for auks with respect to the array and a 2 km buffer, as would typically be used within a displacement impact assessment.

Trinder et al. (2024) also does not specifically attempt to quantify a displacement rate for auks with respect to the array and a 2 km buffer, and indeed the method described in the paper only looks at auk distribution out to 400m from the turbines, so will be unable to detect displacement effects from the array as a whole i.e. the macro-displacement effects extending well beyond 400m reported by numerous studies. Existing SNCB advice acknowledges that

some auks will enter offshore wind farms and a 2 km buffer, as reflected by the matrix of displacement rates allowing impacts to be presented for 10-100% displacement, with an emphasis on 30-70% . In the current assessment framework, birds that are not displaced from the array and buffer area are assumed to be unimpacted. It is effectively the behaviour of those unimpacted birds that the new method outlined in Trinder 2024 assesses, rather than those that are deterred from approaching or entering the array and are subject to displacement as a result. This means that the new method appears to have rather limited relevance to impact assessments, given the necessary focus of these on array-scale displacement. Natural England do not believe it is appropriate to try to quantify the magnitude of macro-displacement (in terms of the percentage of birds displaced) using data from a method that by design can only consider displacement from individual turbines.

In summary, Natural England do not agree that these studies provide evidence to support a single displacement rate of 50% and continue to advocate for a range-based approach when considering displacement impacts in terms of both displacement and mortality rates.

4. Comments on Appendix A: Updates requested in RR-045 for Deadline Three in 20.2 The Applicant's Comments on Deadline 2 Submissions [REP3-037]

Natural England has previously requested clarification of the apportioning rate used for kittiwake following the inclusion of offshore breeders within the apportioning calculations [REP1-061, REP2-095, REP3-070]. The Applicant has provided this within Appendix A of REP3-037 and also intends to incorporate these updates into 7.1.1 Offshore and Intertidal Ornithology Apportioning [AS1-099] when it is updated at Deadline 4. Natural England has reviewed these updates and assume that the stated count of **862** AONs (which was then apparently multiplied by two to give an offshore population of **1,672**, which then fed into the apportioning calculation) is a typographical error, and that the correct count of AONs was **836** (since 836 x 2 = 1,672) as per Annex D of 15.9 ORBA Appendix D Offshore Ornithology Baseline Summary 'Ornithological Census and Capture Trial report July 2023' [PD1-086].

Regardless, the Applicant has clarified that the apportioning rate used within the assessment for kittiwake to FFC SPA is 61.3% and Natural England consider that on balance this rate is appropriate to be used by the Applicant, though given it is based on offshore rig surveys from a single year only, do consider this a source of uncertainty in the impact assessment.

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Table 1: Natural England's Detailed Advice on - 19.8 Levels of precaution in the assessment and compensation calculations for offshore ornithology [REP2-057]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	3.1.2.5	Collision Risk Monitoring (CRM) parameters – avoidance rate Please refer to the Joint SNCB advice note (SNCBs 2024) with regards to the justification for the advised avoidance rate for kittiwake (all gulls rate rather than species-specific rate from Ozsanlav-Harris et al. 2023).	To note.
2	3.1.2.1 – 3.1.2.4	CRM parameters – Nocturnal Activity Factor (NAF), flight speed, flight height Natural England advise that in general, caution must be used when proposing alternative parameters for collision risk modelling to those recommended by the SNCBs, due to the way avoidance rates are calculated. The calculation of avoidance rates involves a comparison of how many collisions are predicted by the model, in the absence of avoidance and using given parameters, with real-world collision data collected from wind farms. If the model parameters are changed so that fewer collisions are predicted in the absence of avoidance, then a lower avoidance rate may also be warranted - the smaller the gap between predicted (without avoidance) and observed collisions, the lower the avoidance rate. The SNCBs are currently reviewing some of the recommended parameters for collision risk modelling, which may lead to some changes, but currently Natural England do not consider it appropriate to use a different flight speed to the recommended value as an input for stochastic collision risk modelling (sCRM), for the reasons stated above. However, we do recognise that data collection on flight speed and nocturnal activity of various seabird species is yielding further insights into seabird behaviour.	To note.
3	3.1.3	Displacement assessment – displacement and mortality rates The evidence base for displacement is limited but indicates that the extent to which auks are displaced, and potentially also the levels of mortality associated with this displacement, varies depending on the location of the development and colonies with connectivity. Natural England's range-based approach seeks to encompass a range of potential displacement effects as observed in post-construction monitoring studies (30-70%) and mortality rates (1-10%) that reflect the considerable uncertainty relating to site-specific drivers for, and impacts of, displacement.	To note.

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
		We reiterate that the use of single values runs a significant risk of 'false precision', which is inappropriate given the range of responses apparently recorded and the limitations of the studies thus far carried out. Natural England wish to highlight to the Examining Authority that the Applicant's representation of Natural England's preferred approach being based on single values of 70% displacement and 5% mortality is not accurate, and that we have repeatedly requested for the Applicant to present full displacement matrices following Natural England's approach to apportioning "*to allow us to assess the predicted impacts using a range-based approach*". We only advocate the use of single values when it is necessary to do so in order to inform compensation calculations. Natural England anticipate that the forthcoming Offshore Renewables Joint Industry Programme (ORJIP) project *'Improving understanding of distributional change for relevant seabird species (ImpUDis)'* will provide a comprehensive overview of auk displacement. Until this project returns evidence which can inform displacement rates of auks, Natural England continue to advise the use of the displacement matrix (as set out in the Joint SNCB Interim Displacement Advice Note 2022) and will continue to use a range-based approach for our conclusions based on impacts calculated using these rates. The evidence base for displacement rates, including some of the studies referenced by the Applicant, is discussed in more detail in our response to 19.10 Rates of displacement in guillemot and razorbill [REP2-059] in Section 2.2.	
5	3.1.3.4	<u>Sabbaticals</u> As advised at Preliminary Environmental Information Report (PEIR) and Relevant Representations, Natural England currently advise that the evidence base is insufficient to support the use of sabbaticals within assessments. To expand on this further, the Applicant refers to published rates within Horswill & Robinson (2015). Any review of the seabird demographic rates presented by Horswill & Robinson (2015) and the literature used to inform them should introduce significant caution in any proposed consideration of sabbaticals during impact assessment. For example, the only kittiwake data from which rates can be derived was collected at a French colony between 1979 and 1988. The study from which a sabbatical rate	To note.

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
		for guillemots was derived found high levels of individual variation with 6% of the birds accounting for 47% (n=146) of non-breeding cases (Harris & Wanless, 1995). Furthermore, regardless of their status in a particular year, it should be acknowledged that birds on sabbatical are part of the breeding population, and even if we had sufficient data to determine a percentage of birds that should be considered sabbaticals, simply removing them from the assessment during apportioning may not be appropriate.	
	Paras 17 and 48	The Applicant states that the Project will have a worst-case scenario density of approximately 1.66 turbines/km^2 and that this is low, within the context of the studies reviewed by APEM (2022) and "*lower than all but one project assessed as part of the APEM review*". This is used as justification for why a higher (70%) displacement rate is even less representative of actual displacement at the site. However, the APEM (2022) report states that "*comparison of array area and WTG layout density between OWFs with or without reported displacement effects show no significant difference*" and that "*WTG density may not be a predominant factor influencing displacement rates in auks*". We highlight that the APEM (2022) report goes on to say that the data suggests that there may be a significant correlation between displacement effect and total windswept area as a percentage of the array area footprint. The Applicant has not provided this metric, but it is worth noting that the maximum rotor diameter for the Project (340m) is significantly greater than for any of the 21 projects assessed as part of the APEM review, which all have rotor diameters of 154m or less. Natural England reiterate our position that it remains difficult to draw comparisons between the projects described in the review and proposed developments including Outer Dowsing Offshore Windfarm, with no projects considered in the APEM analysis that are of a similar scale in terms of area and turbine size. The effect of these parameters on wind farm risk perception by birds and the influence on displacement rates currently remains unknown, with different reports/studies (including Lamb et al. 2024) reporting contradictory findings in relation to turbine density and other windfarm parameters.	To note.

Table 2: Natural England's Detailed Advice on - 19.9 Consideration of bioseasons in the assessment of guillemot [REP2-058]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
	Executive Summary	The Applicant argues that for guillemot, the use of only two bioseasons (breeding and non-breeding) adds an element of precaution to the assessment because the breeding bioseason (March to July, as defined as by Furness 2015) encompass a period when many guillemots are behaving as non-breeding birds. It is worth noting, however, that Furness defines March to June as the 'migration-free breeding season' and the return migration through UK waters as December to February i.e. the months of March and April are not considered to be periods when migration is occurring. This is based in part on data showing very low movement of guillemot past migration sites from March onwards in comparison to January and February. Natural England reiterate that our position remains that there is currently no clear evidence to support the idea that birds are substantially less bound to the nest site in April than at other times during the breeding season.	To note.
	Section 3, para 6	This paragraph is not a fair representation of Natural England's recommendation of three bioseasons for guillemot in stating that it is "*a modification of the previous position regarding bioseasons for guillemot, as stated in the Joint SNCB Interim Displacement Advice Note (2022)… which recommends following Furness (201%) in defining two bioseasons for guillemot*…". The guidance as set out in the Joint SNCB Interim Displacement Advice Note (2022) states that "*SNCBs recommend that mean seasonal peak abundance be used to produce,* ***as a minimum, two seasonal matrices (breeding and non-breeding season)****. However, for a number of species there may be evidence to support an* ***additional breakdown of the non-breeding period to account for periods when distribution, activity or population mix are distinctly different (for example post-breeding aggregations of some auk*** *and sea duck* ***species associated with flightless periods****, migration periods etc.)*" (our emphasis) and that "*decisions regarding how to treat seasonality in any displacement assessment should be made on* ***a site and species-specific basis****, in discussion with SNCBs*" (our emphasis).	To note
	Section 3, para 6	The Applicant states that "*the addition of the post-breeding bioseason covering the months of August and September substantially increases the Project's impact, increasing the (pre-apportioning) total number of birds impacted (using a 50% displacement rate and a 1% mortality rate) from 34.4 to 88.8 birds.*" It is not clear where these values have been taken from and so clarity would be appreciated. The Environmental Report [PD1-081) appears to show the (pre-apportioning) annual mortality estimate for guillemot using the Applicant's preferred bioseasons (breeding and non-breeding) at 50% displacement and 1% mortality as 117.9 birds, not 34.4.	Please could the Applicant clarify where these values are presented within the assessment.

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