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Dyddiad/Date: 12/11/2024

Er sylw / For the attention of: Susan Hunt

Annwyl / Dear Susan,

PROPOSED MORGAN OFFSHORE WINDFARM

PLANNING INSPECTORATE REFERENCE: EN010136

EIN CYFEIRNOD / OUR REFERENCE: 20049491

RE: NATURAL RESOURCES WALES' DEADLINE 3 SUBMISSIONS

Thank you for your Rule 8 letter, dated 12 September 2024, requesting Cyfoeth Naturiol Cymru / Natural Resources Wales' (NRW) comments regarding the above.

Please find below NRW's Deadline 3 submissions which comprises advice on the submissions produced by the Applicant and received at Deadlines 1 on 3 October and 2 on 23 October 2024.

For ease of review, where our advice below refers to the Applicant's main response [REP2-005] to NRW's Deadline 1 Written Representations [REP1-056], each paragraph is preceded with the corresponding reference number extracted from REP2-005 e.g. REP2-005; para REP1-056.1.

These representations and attachments should be read in conjunction with advice previously provided into the examination.

NRW continues to engage extensively and proactively with the Applicant throughout the examination in order to resolve outstanding matters.

The comments provided in this submission, comprise NRW's response as a Statutory Party under the Planning Act 2008 and Infrastructure Planning (Interested Parties) Regulations 2015 and as an 'Interested Party' under s102(1) of the Planning Act 2008.

Our comments are made without prejudice to any further comments we may wish to make in relation to this application and examination whether in relation to the Environmental Statement (ES) and associated documents, provisions of the draft Development Consent Order ('DCO') and its Requirements, or other evidence and documents provided by bpENBW ('the Applicant'), the Examining Authority or other Interested Parties.

With respect to the advice contained within this document relating to nature conservation within Welsh inshore waters, reference to Welsh Offshore waters and English Onshore / Offshore waters may be made in view of mobile species, Zones of Influence and potential cross-border and cumulative / in-combination impacts on the Welsh inshore marine area and protected sites. Where potential impacts are wholly within Welsh offshore waters or English Onshore / Offshore waters, NRW defer to comments provided by the Joint Nature Conservation Committee (JNCC) and Natural England (NE) respectively.

Should further clarity be required, we will be pleased to answer these further through the Examining Authority questions and / or a Rule 17 request(s).

Please do not hesitate to contact Paige Minahan
[REDACTED] cyfoethnaturiolcymru.gov.uk) and Adam Cooper
[REDACTED] cyfoethnaturiolcymru.gov.uk) should you require further advice or information regarding these representations.

Yn gywir / Yours sincerely,

[REDACTED]
Andrea Winterton
Marine Services Manager
Natural Resources Wales

[CONTINUED]

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1.1 Marine Ornithology

NRW welcome the work the Applicant has done on updates to the assessments in light of our comments at Relevant and Written Representations [RR-027, REP1-056]. However, these updates (e.g. to apportioning, displacement assessments etc) have each been done in isolation but they have not been transposed through to an overall updated assessment. Whilst these updates may not alter the Applicant's overall conclusions on levels of impact significance, they do alter the overall predicted impact numbers.

We also note that whilst the Applicant has carried out multiple quantifications of impacts based on different approaches and parameters (i.e. the Applicant's preferred approach and the Statutory Nature Conservation Bodies [SNCBs] advised approach), full matrices have been provided only in some instances. For example, results from the Cumulative Effects Assessment and in-combination gap filling note [REP1-010] have not been propagated through into the Applicant's updated assessments. Therefore, we stress the difficulty in following what impact estimates the Applicant intends on using in the Application and which documents they are located in. This will be essential for future projects to access in order to populate their cumulative and in-combination assessments. We therefore request that, once SNCB methodological concerns have been addressed, that the Applicant submits a 'final position' summary document into Examination that details or tabulates the impact estimates according to the SNCB advised approach and that of the Applicant. While this may not change overall conclusions without combining into updated assessments, it is hard to draw conclusions as the assessment protocol used by the Applicant doesn't currently follow NRW advice provided.

With regard to presenting assessments following SNCB advised approaches in applications, we recommend that the Applicant considers the recent letters from PINS to the Mona and Outer Dowsing Applicants, which request that the Applicants present assessments following NE/NRW/JNCC (and others) advocated approaches as well as their own into the examination - see:

- Mona request: [Rule 17 letter - ExA request for further information](#)
- Outer Dowsing request: [EN010130-000725-20240703 Rule 17 Request for further Information.pdf](#) (planninginspectorate.gov.uk)

Whilst we consider it likely that the predicted impacts from the Morgan Generation Assets project alone to Welsh designated sites are likely to be small and result in no adverse effects, based on the points raised above, we consider it premature at this stage to reach definitive conclusions on the levels of significance of predicted impacts to Welsh designated sites both from the project alone and in-combination.

With regard to in-combination assessments, we note that once the updated assessments covering the full range of SNCB advised rates have been completed, then if any potential project alone impact (including at the upper end of the advised

ranges) equates to more than 0.05% of baseline mortality then this site and species combination should be taken through to a full in-combination assessment, which should take into account the issues with gaps in data for historic projects. Further comments on documents submitted at Deadline 2 can be found below.

1.1.1 Comments on REP2-005 – Applicant’s Response to NRW Written Representations

1. **REP1-056.11:** NRW considers that the confidence intervals associated with collision estimates (including those for the Statutory Nature Conservation Body (SNCB) advised input parameters) should also be provided and taken through the assessment to assess the full range of potential effects, or at least be utilised in the approach to screening sites for Likely Significant Effect (LSE).

To ensure transparency and as examples of best practice, all code, input/output parameters, and the full ranges of Applicant and SNCB values should be made available in an appendix or on request.

2. **REP1-056.11 to REP1-056.12:** NRW notes that there is unlikely to be a significant difference on conclusions of collision risk in the particular case of the Morgan Generation Project between using the Applicant’s approach and the SNCB advised approach. This might not be the case for other projects and is mainly due to the predicted magnitude of impacts being small and as such, low risk.
3. **REP1-056.13 to REP1-056.14:** Whilst we acknowledge the Applicant’s position regarding flight speeds, NRW maintain our position as set out in our Written Representations (WRs) [REP1-056]. It is noted that the flight speeds advised by NRW are as advised for use in the recently published joint SNCB Collision Risk Modelling (CRM) advice note. However, we note the Applicant has considered both our advised flight speeds and their preferred flight speeds in assessments. We reiterate that we will base our conclusions on levels of significance to Welsh sites using the predicted impacts based on our advised input parameters (including flight speeds and avoidance rates).
4. NRW continues to advise that the apportioned predicted impacts calculated using SNCB parameters are made clear in the Habitats Regulations Assessment (HRA) Stage 1 Screening and HRA Stage 2 ISAA where sites are taken forward to this stage. It is possible that this may not materially change the conclusions but without seeing this information we are unable to confirm our agreement with the conclusions. We recommend that the tables of apportioned impacts for each designated site/feature considered has separate columns presenting the apportioned collision impacts for the SNCB advised input parameters and one for the Applicant’s preferred parameters. This will also be useful for future projects to understand the figures for the Morgan Generation Project in future in-combination assessments.
5. **REP1-056.15 to REP1-056.16:** NRW maintains our position on avoidance rates as set out in our WRs [REP1-056]. However, we continue to note that the Applicant has considered both our advised species-group avoidance rates and their preferred species-specific avoidance rates in assessments. It is noted that

the use of species-group avoidance rates is advised in the recently published joint SNCB CRM advice note. We reiterate that we will base our conclusions on levels of significance to Welsh sites using the predicted impacts based on our advised input parameters (including flight speeds and avoidance rates).

6. NRW continues to advise that the apportioned predicted impacts calculated using SNCB parameters are made clear in the Habitats Regulations Assessment (HRA) Stage 1 Screening and HRA Stage 2 ISAA where sites are taken forward to this stage. Please see paragraph 4 above.
7. **REP1-056.17:** Please see our comments below regarding this aspect in section REP1-013, paragraph 50.
8. **REP1-056.18 to REP1-056.19:** Please see our comments below regarding this aspect in section REP1-010, paragraph 35.
9. **REP1-056.20:** Please see our comments below regarding this aspect in section REP1-010. However, we note the Applicant has stated '*The Applicant notes that there are reasons why cumulative and in-combination numbers may differ in the assessments presented by different projects including, but not limited to, the application of surrogate apportioning values, seasonal definitions etc.*'. Our understanding is that advice provided by NRW regarding the assessment methods is aligned with Natural England (NE) as this advice has been provided for both Mona and Morgan Generation Projects, through the joint Expert Working Groups and through the Relevant Representations submitted by both SNCBs.
10. Therefore, if the advice provided to both projects is followed then it is unclear how there could be differences occurring as the Applicant suggests. Considering Mona Generation, Morgan Generation and Morecambe Generation projects are all in examination at the same time and are all located in the Irish Sea, that they should all be including the same list of other projects in the cumulative/in-combination assessments, and the total predicted cumulative/in-combination impacts assessed for each species/population should be the same across the three projects. Therefore, we recommend the three projects take a collaborative approach to ensure their assessments are consistent.
11. **REP1-056.21:** NRW welcomes the information provided by the Applicant regarding how collision figures were recalculated for other projects using the new advised avoidance rates. We are satisfied with the Applicant's approach and now consider this issue closed.
12. **REP1-056.22:** NRW welcomes the Applicant's intention to include consideration of the comments raised in our WRs [REP1-056] regarding the Awel y Môr large gull figures (Option 3 vs Option 2) in the cumulative/in-combination assessments in the sensitivity review of the cumulative and in-combination assessments they intend to submit at Deadline 3. Therefore, NRW will provide further comment/advice into the examination once this information has been submitted at Deadline 3.

13. **REP1-056.23:** NRW acknowledges that the Applicant is undertaking a sensitivity review of the cumulative and in-combination assessments in the application to account for recently submitted projects. It is our understanding that this will also include consideration of the updates to the Morgan Generation Project impact assessment figures from the PEIR figures to those following the submission application documents for this project. Therefore, NRW will provide further comment/advice into the examination once this information has been submitted at Deadline 3.
14. **REP1-056.24:** NRW notes and welcomes the Applicant's response.
15. **REP1-056.25:** NRW notes the Applicant's response and has no further comment.
16. **REP1-056.26:** The Applicant 'welcomes that and agrees with NRW's conclusion that it is likely that an adverse effect on integrity from operation and maintenance vessel movements can be ruled out for the red-throated diver and common scoter features of the Liverpool Bay SPA based on the measures adopted as part of the Morgan Generation Assets'. However, as noted by the Applicant in their HRA Stage 1 Screening Report [APP-099] 'Screening (for which this HRA Stage 1 Screening Report applies) – the first stage involves a screening for LSE which is a simple assessment to check or screen if, in the absence of mitigation....Appropriate Assessment – the second stage is an Appropriate Assessment, which must be carried out if it is decided that there is a risk of a LSE on a European site or if there is not enough evidence to rule out a risk (as required by Article 6(3) of the Habitats Directive). The Appropriate Assessment should assess the LSEs of a proposal on the integrity of the site and its conservation objectives and consider ways to avoid or reduce (mitigate) any potential for an 'Adverse Effect on the Integrity of the site". Therefore, NRW remain concerned that the HRA Stage 1 Screening Report does not consider the potential for disturbance and displacement impacts from vessel movements in the construction or operation and maintenance phase on the red-throated diver and common scoter features of Liverpool Bay SPA. Until it can be confirmed that vessel movements will not pass through the SPA in the wintering period, LSE cannot be ruled out for these features. Natural England (NE) also advise that red-throated diver and common scoter at Liverpool Bay SPA should be assessed in the HRA Stage 2 ISAA Part 3 Report. The Applicant should not rely on the mitigation measures they propose as justification for ruling out LSE for these features of this site. The mitigation should be considered as part of the Appropriate Assessment.
17. NRW continue to note the measures listed in Table 5.26 of the submitted Environmental Management Plan (EMP) [APP-023] that will include measures to minimise disturbance to rafting birds from transiting vessels [APP-070] and include a Marine Pollution Contingency Plan (MPCP). It is noted and welcomed that the offshore EMP is secured within the deemed marine licence (dML) in Schedule 3 Part 2 of the draft Development Consent Order (DCO) [APP-005]. Therefore, based on the adoption of best practice vessel operations to minimise disturbance we would consider it is likely that an Adverse Effect on Site Integrity from operation and maintenance vessel movements can be ruled out for these features of the SPA. However, considering the location of Morgan Generation

Project in English waters, we would recommend that the advice of NE is sought regarding this.

18. **REP1-056.27:** No further comment.
19. **REP1-056.28 to REP1-056.30:** NRW disagrees that the Applicant's response addresses our initial concerns. Therefore, we reiterate that the SNCBs do not support the Applicant's methodology which was developed by Hornsea Project 2 to undertake kittiwake age apportioning. We continue to advise that the Applicant use the 84.11% of adults recorded in the Morgan site-specific DAS data to undertake kittiwake age apportioning and submit this into examination.
20. NRW does welcome that in Section 1.3.3 [REP1-013] the Applicant has not applied the Hornsea 2 approach to kittiwake age-class apportioning and has instead taken the most precautionary approach of assuming all birds are adults. NRW recommend the Applicant also considers revising the use of the Hornsea 2 age-class apportionment approach for all the other assessed designated sites (i.e. SPAs) for kittiwake.
21. **REP1-056.31 to REP1-056.33:** No further comment and NRW consider this issue resolved.
22. **REP1-056.34:** The apportioned collision figures presented throughout the HRA Stage 2 information cover a range of predicted impacts based on a range of input parameters (using species-specific and species group avoidance rates and various flight speeds including those advised by SNCBs and those from ORJIP, Skov et al. 2018). Whilst it is understood that the impacts resulting from the SNCB advised input parameters are included within this range, it is noted that the way the apportioned collision figures are presented (i.e. just as a range of figures), means it is not clear which predicted mortalities relate to which set of input parameters. NRW reiterates that as we will base our advice on the predicted impacts as per the SNCB recommended input parameters (including flight speeds and species group avoidance rates). Furthermore, NRW advise that the apportioned predicted impacts calculated using SNCB parameters are made clear in the HRA Stage 1 Screening and HRA Stage 2 ISAA where sites are taken forward to this stage.
23. Whilst this may not materially change the conclusions, without this information NRW are unable to confirm agreement. Therefore, NRW recommends that the tables of apportioned impacts for each designated site/feature considered has separate columns presenting the apportioned collision impacts for the SNCB advised input parameters and one for the Applicant's preferred parameters. This will also be useful for future projects to understand the figures for the Morgan Generation Project in future in-combination assessments.
24. **REP1-056.35 to REP1-056.44:** NRW maintains our advice regarding a range-based approach to displacement assessments, as per our advice provided in WRs [REP1-056]. Whilst welcoming the further displacement analyses incorporating additional displacement and mortality rates provided by the Applicant in REP1-011, it is noted that the Applicant has not provided

apportioned impacts across the full range of rates as advised by the SNCBs (further details can be found below under section 1.1.3 REP1-011).

25. As mentioned above, when presenting assessments following SNCB advised approaches in applications, it is recommended that the Applicant considers the recent letters from PINS to the Mona and Outer Dowsing Applicants (see summary comments above).
26. **REP1-056.45:** Please see responses to REP1-056.34 to REP1-056.44 above. NRW reiterates the advice provided in the WRs [REP1-056] that we are not advising that the HRA be based solely on the upper end of the % displacement and % mortality rates advised, but NRW does advise that in order to account for the large degree of uncertainty regarding displacement rates and effects, that the assessment consider a range of potential rates and effects rather than focussing on a single figure.
27. **REP1-056.46:** Please see our comments below (section 1.1.3, REP1-011).
28. **REP1-056.47:** The Applicant notes that collision risk estimates calculated using SNCB advised parameters are assessed throughout HRA Stage 2 [APP-098]. It is understood that the apportioned collision figures presented throughout the HRA Stage 2 information cover a range of predicted impacts based on a range of input parameters (using species-specific and species group avoidance rates and various flight speeds including those advised by SNCBs and those from ORJIP, Skov et al. 2018). Whilst NRW is aware that the impacts resulting from the SNCB advised input parameters are included within this range, it should be noted that as presented (i.e. range of figures) the apportioned collision figures are not clear which predicted mortalities relate to which set of input parameters. As mentioned above, as NRW will base our advice on the predicted impacts as per the SNCB recommended input parameters (including flight speeds and species group avoidance rates), the apportioned predicted impacts calculated using SNCB parameters should be clearly displayed in the HRA Stage 1 Screening and HRA Stage 2 ISAA where sites are taken forward to this stage.
29. Whilst this may not materially change the conclusions, without this information NRW are unable to confirm agreement. Therefore, NRW recommends that the tables of apportioned impacts for each designated site/feature considered has separate columns presenting the apportioned collision impacts for the SNCB advised input parameters and one for the Applicant's preferred parameters. This will also be useful for future projects to understand the figures for the Morgan Generation Project in future in-combination assessments.
30. **REP1-056.48:** No further comment and NRW consider this issue resolved.
31. **REP1-056.49 to REP1-056.50:** NRW apologise for the incorrect document and paragraph referencing in the WRs [REP1-056]. Our comment relates to the presentation of results in the HRA Stage 2 ISAA Part 3 [APP-098] and that in the tables of apportioned impacts presented for species where collision and displacement have both been considered in assessments (i.e. gannet and kittiwake) do not present apportioned impacts from collision and displacement separately, but the combined impact of the two in Tables 1.24 and 1.25 [APP-

098]. We continue to advise that the apportioned impacts should be presented separately as well as combined, especially as NRW and NE do not advise kittiwake are assessed for displacement.

32. **REP1-056.51:** NRW maintain our advice regarding the ranges of % displacement and % mortality for assessments of displacement for gannet. In REP1-011 it is noted that the Applicant has not provided apportioned HRA assessments for the project alone covering the full ranges of SNCB advised % displacement and % mortality rates [REP1-011]. Therefore, we continue to advise that predicted impacts across the full range of advised rates should be presented, and where the predicted impact from the project alone exceeds 0.05% of baseline mortality at any point within the advised range then the site and feature combination should be taken through to in-combination assessment. It is also recommended that in any updated assessments that cover a full range of SNCB advised rates, the Applicant should also include in these assessments all the other aspects of the assessments that they have considered in isolation thus far.
33. **REP1-056.53 to REP1-056.54:** NRW has no further comments on these aspects.
34. **REP1-056.55:** As noted above (REP1-056.52), NRW maintain our advice that where the predicted impact from the project alone exceeds 0.05% of baseline mortality at any point within the advised range then the site and feature combination should be taken through to in-combination assessment. It is also noted that these in-combination assessments should include impacts from the projects that have been gap-filled [REP1-010].

1.1.2 Comments on REP1-010 – Response to Hearing Action Point 15: Offshore Ornithology CEA and In-combination Gap-filling of Historical Projects Note

35. NRW welcomes the gap filling for historical projects that have been undertaken by the Applicant. NRW broadly considers that the approach taken by the Applicant provides the information requested by the SNCBs and consider that the approach of using Marine Ecosystems Research Programme (MERP) data rather than a proxy approach represents a more repeatable and defensible approach. NRW also welcomes the Applicant considering the advice provided by the SNCBs during the meeting held with the Applicant on the 29th August regarding:
 - Undertaking a comparison of proportions of birds in flight from more coastal projects with data (such as Awel y Môr), with the combined data from the Round 4 Irish Sea Projects; and
 - Including a seasonal and monthly breakdown of the proportions of flying birds within the Round 4 Irish Sea projects digital aerial survey data.
36. We note the standard approach to cumulative and in-combination assessments is to use the consented parameters of each project and to refer to the worst-case scenario (WCS) assessed within the Environmental Statement (ES),

taking account of any updated assessments provided throughout the examination process. Additionally, NRW advise the use of the species-group avoidance rates. Therefore, any advice provided by NRW will be based on the outputs using the species-group avoidance rates and the consented wind farm parameters where these are available and the as-built parameters where consented information is unavailable.

37. We note that the results presented for the gap-fill analysis in REP1-010 do suggest that some of the historic projects contribute to the cumulative effects. The lesser black-backed gull indicative cumulative collision total as presented is now approaching 1% of baseline mortality of the largest Biologically Defined Minimum Population Scales (BDMPS) (0.99% of baseline mortality). It should be noted that as further projects that could contribute to the cumulative and in-combination collision totals have been identified by the Applicant in REP2-023, and hence there is the potential for this cumulative collision indicative impact to increase further following the work to be submitted by the Applicant at Deadline 3. It should also be noted that the herring gull indicative cumulative collision figure for the species-group avoidance rate and including consented wind farm parameters when gap filling has been undertaken has approximately doubled from that presented for without the gap filling in the ES Chapter [APP-023] compared to that following the gap filling exercise presented in REP1-010. This reinforces the need for the gap-fill analysis to have been carried out and we maintain our position that this quantification was necessary.
38. In the 'Review of Cumulative Effects Assessment (CEA) and In-Combination Assessment' [REP2-023], the Applicant has identified several additional projects that have the potential to contribute to cumulative and in-combination collision and/or displacement offshore ornithology impacts that now have data available and that were not included in the CEA, including that presented in REP1-010. These are: The Arklow Bank 2, Codling Wind Park, Hynet, LIÿr, North Irish Sea Array and Oriel projects. Additionally, updated figures for the Morecambe Generation Assets project are now available following the submission of the application for this project. It is noted that the figures included by Morgan Generation Assets project in the CEA have not yet been updated to account for the submission figures in REP1-010. The Applicant has noted in REP2-023 that additional work is required to understand the potential cumulative and in-combination effects of these projects for collision and displacement and has indicated that this will be undertaken for Deadline 3. Therefore, we expect that cumulative assessments will be further updated by the Applicant at Deadline 3, and we consider it inappropriate to comment on the level of cumulative/in-combination impact significance at this point. We will provide further comment/advice into the examination on this following full review of the documents the Applicant intends to submit at Deadline 3.
39. Given that NRW continues to advise that the Applicant presents apportioned impacts across the full ranges of SNCB advised assessment approaches (see comment on REP1-011 below), we advise that where predicted impacts from the project alone exceed 0.05% of baseline mortality for any apportioned impact across the advised assessment ranges, the site/feature combination should be taken through to in-combination assessments. We recommend that in such

instances, the results of the gap-filling exercise undertaken in REP1-010 are subsequently used within the in-combination assessments. The gap-filled results provide the most comprehensive estimate of mortalities at each project that were previously not quantified.

1.1.3 Comments on REP1-011 – Displacement Rates Clarification Note

40. NRW welcomes the additional information supplied by the Applicant. However, it is noted that the Applicant has chosen not to assess apportioned impacts across the full range of advised SNCB % displacement and % mortality rates. Instead, the Applicant has presented assessments against an additional scenario of the % displacement and % mortality rates incorporated into the Secretary of State's Habitats Regulations Assessment (HRA) as part of the Sheringham Shoal Extension and Dudgeon Extension offshore wind farms and Hornsea Four offshore wind farm decision for guillemot, razorbill – namely 70% displacement and 2% mortality regarding auks. The Applicant has also chosen to consider these rates to be applicable to the other species features combinations assessed for the displacement of Manx shearwater and kittiwake in the Morgan Generation Assets HRA, although there is no precedent setting of these rates having been applied at other project consents. There is little evidence to suggest that these rates are applicable to other species (such as Manx shearwater), given the lack of evidence focussed on quantifying species-specific displacement rates. It is noted that the Applicant has reiterated that there is little evidence in turn to support NRW advised rates of 30-70% displacement for Manx shearwater. While a data gap such as this persists, NRW continue to advise that the full matrix of possible values from the SNCB advised, and the Applicant preferred rates be presented explicitly and clearly throughout all assessments.
41. We also welcome the confirmation that the Applicant is actively engaging with the Mona Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets to align cumulative and in-combination assessments where possible. We acknowledge that these projects are being examined separately by different Examining Authorities and that Natural England (NE) is leading the majority of SNCB input in the examinations of Morgan and Morecambe. However, NRW (A) is providing advice into these projects from a mobile species and cumulative impact perspective where there is the potential for the projects to impact Welsh protected sites / features. It should be noted by the Applicant and the ExA that our clear understanding is that the advice provided by NRW (A) regarding the CEA and in-combination assessment methods is aligned with that of NE as the advice has been provided to both the Mona and Morgan generation Applicant's through the joint project EWGs and through the Relevant Representations submitted by both SNCBs for both projects. Therefore, we are uncertain why the Applicant has sought to highlight that there are "*different principal SNCBs*" for Morgan generation assets to the Mona project and if the Applicant is implying that this should have a potential to result in different cumulative assessments or in-combination assessment for Welsh designated sites.

42. NRW notes the Applicant has also presented full displacement matrices for predicted displacement impacts (Appendix B) for the project alone for the following Welsh designated sites and features:

- Skomer, Skokholm and seas off Pembrokeshire (SSSP) Special Protection Area (SPA): Manx shearwater, guillemot (named component of assemblage feature) and razorbill (named component of assemblage feature).
- Aberdaron Coast and Bardsey Island SPA: Manx shearwater.

A full in-combination displacement matrix has also been provided for SSSP SPA guillemot (Appendix D).

43. Therefore, the apportioned rates for the full range of rates NRW advises for sites and features could be extracted. However, as the Applicant has undertaken various updates to assessment approaches (e.g. to apportioning, displacement assessments etc) all in isolation of each other and given these updates have not been transposed through to an overall updated assessment, NRW consider it premature to reach conclusions on impacts from the project alone at present.

44. With regard to Kittiwake and as noted in our Written Representation (WRs) [REP1-056], NRW do not recommend that displacement is assessed for kittiwake as the current evidence base is considered insufficient. Hence, NRW have not provided advice/comment on the displacement aspect of the kittiwake assessment for relevant Welsh designated sites. As raised previously [REP1-056], concerns were identified regarding the appropriateness and applicability of the Applicant's use of the kittiwake adult proportion that was calculated for Hornsea 2. As currently understood, the Applicant has not updated the kittiwake age class apportioning approach used in generating the apportioned adult impacts to relevant designated sites (with kittiwake features presented in REP1-011), including the SSSP SPA. Therefore, NRW maintains concerns regarding this and consider that at present the impacts apportioned for this species may be underestimates. At present, NRW are unable to reach a definitive conclusion on the level of significance of predicted impacts to the kittiwake component of the seabird assemblage feature of the SSSP SPA.

45. There is currently no adequate assessment of gannet presented, the Applicant has instead used 50% displacement and 1% mortality rates without providing a matrix of SNCB advised rates to evaluate accordingly. NRW therefore maintains advice and reasoning for the ranges of % displacement and % mortality for gannet displacement assessments (i.e. 60-80% displacement and 1-10% mortality) [REP1-056]. NRW continues to advise that this information is presented by the Applicant, or as a minimum, the full displacement matrices are presented for gannet designated sites (including Grassholm SPA), so that interested parties (IPs) can base their advice on the ranges that they advise.

46. NRW also reiterates that for species that are assessed for both collision and displacement (gannet and kittiwake), the impacts from displacement and collision should be presented separately as well as combined. This also applies for collision impacts where the separate columns are those depending on whether the input parameters have been advised by the SNCB or the

Applicant's preferred. This will ensure that the numbers for the different scenarios are explicitly clear.

1.1.4 Comments on REP1-012 – Response to Hearing Action Point 15: Apportioning Sensitivity Analysis

47. NRW notes the Applicant has presented a comparison of the breeding season apportioning rates that result from utilising Seabirds Count data against the approach used in the application. It is noted that this is a result of comments received from Natural England (NE). NRW agrees with this approach.
48. Whilst NRW acknowledges that the work presented would be unlikely to alter the Applicant's overall conclusions on levels of impact significance for Welsh designated sites, it is noted that the changes to apportionment rate do alter the overall predicted impact numbers. Therefore, it is recommended that these alterations to the breeding season apportionment rates are taken through to the updated overall assessments of impacts from the project alone. These figures would in turn be clearly available and readily accessible by future offshore wind projects undertaking cumulative/in-combination assessments where the Morgan Generation project will be included.
49. Whilst the analysis presents updated apportionment rates for the SPA colonies, no analysis has been presented for the specific non-SPA colonies assessed quantitatively (Great Orme's Head SSSI). This also has not been provided in the Great Orme's Head SSSI clarification note [REP1013].

1.1.5 Comments on REP1-013 – Response to Hearing Action Point 15: Great Orme Head SSSI Clarification Note

50. The Applicant presents the breeding season apportionment rates to the colony in Table 1.1 and also presented in APP-057. However, the colony was not included in the analysis presented (as noted above) and therefore no information has been provided to indicate what changes would result to the Great Orme's Head SSSI breeding season apportionment rates if the Seabirds Count data was used (rather than the Seabird 2000 data). Whilst understanding this analysis may not alter the Applicant's overall conclusions on levels of impact significance for the site, it may alter the overall predicted numbers. NRW would therefore recommend the Applicant includes the updated apportionment approach for the Great Orme's SSSI.
51. NRW welcomes the inclusion on how the non-breeding season apportionment values for the colony have been calculated. Although it is noted that for the proportion of birds from the colony expected to be present in the respective BDMPS area during each relevant season, the Applicant states '*As the Pen y Gogarth / Great Ormes Head SSSI is not explicitly including in Furness (2015) the proportions applied have been taken from the closest colony that is included in Furness (2015)*'. The Applicant has not however stated what colony(ies) have been used as the closest colony for each species: NRW recommends further clarification on this.

52. We welcome that assessments have been based on using adult colony sizes and adult survival rates as previously advised by NRW.
53. It is noted that displacement assessments for auks (guillemot and razorbill) only consider apportioned impacts at the Applicant's original preferred rates (50% displacement and 1% mortality and 70% displacement and 2% mortality). Assessments therefore have still not been presented at the full range of SNCB advised rates (30-70% displacement and 1-10% mortality), nor have the full matrices of apportioned impacts to the colony have been made available. Therefore, our advice in our WRs remains [REP1-056]. It is recommended this information is provided by the Applicant, or as a minimum, the full apportioned displacement matrices for the site are provided in order to determine the level of significance of impacts to this colony from the project alone.
54. NRW welcomes that the Hornsea 2 approach has not been applied to kittiwake age-class apportioning, and instead the most precautionary approach has been used assuming all birds are adults (Section 1.3.3).
55. In Table 1.7 it is unclear which of the range of values in column 2 refer to the Applicant's preferred input parameters and which to the SNCB advised ones (i.e. avoidance rates and flight speeds) and hence which resultant increase to baseline mortality relates to this combination of parameters. As raised previously, given our advice will be based on the predicted impacts as per the SNCB recommended input parameters (including flight speeds and species group avoidance rates), NRW recommends these are explicitly separated from the Applicant's preferred parameters (such as having separate columns for both).
56. It is also advised that the Applicant considers assessment of cumulative impacts to the SSSI of the Morgan Generation project cumulatively with other plans and projects (given that Awel y Môr, Mona and Morecambe generation assets projects are all located within foraging range of all three features of the Pen y Gogarth / Great Orme's Head SSSI). It is acknowledged that as part of Mona's examination process an updated Great Orme's Head SSSI will be submitted which is expected to include a cumulative assessment. Therefore, it is suggested that as part of this examination process the Applicant considers assessment. It is also recommended that where the predicted impact from the Morgan Generation project alone exceeds 0.05% baseline mortality for the colony population for a feature at any point across the SNCB advised assessment ranges, then this feature should be taken through to cumulative assessment.
57. It is also advised that where the predicted annual mortality equates to 1% or more the baseline mortality of the colony (project alone and/or cumulatively), further consideration is required through Population Viability Analysis (PVA).

1.1.6 Comments on REP2-021 – Treatment of Birds in Flight Data in Abundance Estimation

58. Whilst NRW did not comment on this aspect of the Applicant's assessment initially, we welcome the Applicant's undertaking of comparative analysis

between densities of birds in flight from the array area (SNCB advised approach) versus the array area + 10km buffer. It is noted that proportional changes in densities input to Collision Risk Modelling (CRM) can be used to adjust the resulting mortality estimates. By doing so, the proportional increase/decrease in densities identified by the Applicant can be used to inform conclusions on levels of project alone impacts which are nonetheless predicted to be low for the Morgan Generation Project.

59. NRW will continue to advise that densities considered from CRM should be derived from the array area only and any changes to CRM resultant figures as a result of these additional analyses (in line with SNCB advice) will be accounted for when drawing conclusions on levels of predicted impact.

1.1.7 Comments on REP2-023 – CEA Review

60. NRW welcome that the Applicant has engaged with SNCBs on the proposed methodology for a ‘gap-filling’ exercise and as a result has produced a technical note regarding this exercise in accordance with the SNCB Advice Note at Deadline 1 [REP1-010 & REP2-023], which identified further projects to be included within the scope of work to be submitted at Deadline 3. For more detailed comments on the CEA gap-filling approach please see earlier response to REP1-010 and REP1-056.19.

1.1.8 Comments on REP2-016 – Mitigation and Monitoring Schedule F01 F02 Tracked

61. NRW welcome the Applicant’s initial consideration of monitoring and mitigation for rafting birds. However, it would be premature to comment on this plan further at this stage. Referred to above (REP1-056.26) and in Examiner’s Questions Response (HRA 1.11). NRW remain concerned that the HRA Stage 1 Screening Report does not consider the potential for disturbance and displacement impacts from vessel movements in the construction or operation and maintenance phase on the red-throated diver and common scoter features of Liverpool Bay SPA.

1.1.9 Comments on REP2-010 – Errata F01 F02 Tracked

62. NRW welcomes the changes to table headings 1.1-1.12 [APP-076].

1.2 Marine Mammals

63. **REP2-005; para REP1-056.56 to REP1-056.57:** We note this is a summary of NRW’s key Written Representations (WR) key issues relating to marine mammals. We have no further comments and note the Applicant explains in further detail elsewhere.

64. **REP2-005: para REP1-056.58:** No further comment and issue addressed.

65. **REP2-005 para REP1-056.59 to para REP1-056.63:** NRW can confirm that we still agree with an overall conclusion of “low magnitude”. We also note that this methodological discussion does not materially impact our agreement with the

overall conclusions that there will be no significant effect / adverse effect on marine mammal populations due to the mitigation methods that will be employed.

66. We welcome the review of the term “habituation” with a greater emphasis on tolerance, and also welcome the Applicant’s statement that direct measures of associated energetic costs of exposure to vessel noise would be useful in future. We agree that any parameters for disturbance remain a work in progress in the scientific community and will not be available for the Morgan project.

67. As currently presented, the estimated numbers disturbed are for a vessel at a fixed point in time only. Essentially, this is a divergence of opinion on how best to calculate the numbers of animals disturbed. By way of explanation our written representation was mainly underpinned by three points:

- Firstly, we believe that presenting numbers of animals disturbed based on a static radius to be a significant underestimate compared to a methodology that in some way captures the movement of vessels (even if this is a simplified methodology) – this view is unchanged from the pre-application period. As mentioned in our written representations and pre-application comments, we fully acknowledge that attempting to make a (maximalist) calculation that attempts to include everything (i.e. all variables) without any simplifying assumptions would be challenging for many reasons including for e.g.: (a) absence of existing guidance / standard methodologies that e.g. consider energetic costs of interrupted feeding, (b) the difficulties of considering issues like animal movement in and out of the area / repeated disturbance to the same individual, (c) all individual vessel trips and types which will differ. In other words, independently of whether a radius of 23 km or 3.627 km is used we still agree that attempting the above would be disproportionate in terms of the effort involved especially given the uncertainties noted. However, this is not equivalent to agreeing that therefore the use of a static radius is a suitable approach to estimate numbers disturbed.
- Secondly, in the assessment the main argument posed is that a maximalist calculation would be disproportionate and therefore this justifies taking a static approach presented in table 4.43. We disagree with the conclusion made here because a maximalist calculation and a static approach are not the only two options possible. It is quite possible to carry out some form of intermediate simplified methodology (e.g. as has been suggested in our written representations) and such an approach does not seem to have been considered in the assessment.
- Finally, we note the argument that using a behavioural impact radius of 7 km is a worst-case scenario and more conservative than the modelled range of 3.627 km, or the range of 4 km at which responses were no longer noted in Benhemma Le Gall et al. 2020. We agree that this is valid in the context of an impact area calculated from a static radius. However, as we posited in the first point, a static radius would be an underestimate compared to a simplified methodology which captures the movement of vessels. This is why we suggest that in an effort to make the latter method more realistic and avoid the potential over precaution from a

blanket application of a 7 km radius which assumes 100 % disturbance, the Applicant could for example either (a) apply the modelled impact range of 3.627 (noting that this would still be an overestimate if we were to assume 100% disturbance), or (b) use refinements based on the literature. As suggested in our written representations, one example of this could have been assuming e.g. 24% disturbance at 3 km, and 0% at 4 km (as per Benhemma le Gall et al).

68. NRW notes the commitment of the Applicant to the development of, and adherence to, an Offshore Environmental Management Plan (EMP) which includes measures to minimise disturbance to marine mammals (and rafting birds) from transiting vessels. We welcome this commitment, which we consider could mitigate most of the impacts, making the overall conclusions acceptable.

69. **REP2-005; para REP1-056.64 to REP1-056.72:** NRW considers the Applicant's response is sufficient and welcome the Applicant's commitment that the time period and final Acoustic Deterrent Device (ADD) duration will be agreed post-consent, in the final Marine Mammal Mitigation Plan (MMMP) and secured by condition within the Development Consent Order (DCO).

70. **REP2-005; para REP1-056.73 to REP1-056.74:** Volume 2, Chapter 4: Marine Mammals [AS-010] which NRW received after WR submission, discusses barrier effects in more detail for marine mammals. NRW consider the Applicant's assessment to be sufficient and this issue to be resolved.

71. **REP2-005; para REP1-056.75 to REP1-056.78:** NRW have reviewed the Applicant's response on interrelated effects [PD1-017]. Given the mitigation measures planned, including the development of the MMMP, and we anticipate being able to agree with the overall conclusions in the marine mammals chapter of the environmental statement (ES) [AS-010] following discussion and provided agreement is reached on mitigation measures post-consent, secured through conditions.

72. **REP2-005; para REP1-056.79 to REP1-056.-80:** These paragraphs refer to our representations about the Applicant's outline Underwater Sound Management Strategy (USWMS). We welcome the commitment of the Applicant to continue to engage with NRW to develop the USWMS during examination and post-consent.

73. **REP2-005; para REP1-056.81:** We welcome the Applicant's response and consider this issue now resolved.

74. **REP2-005; para REP1-056.82 to para REP1-056.85:** We welcome the Applicant's response and consider this issue now resolved.

75. **REP2-005; para REP1-056.86 to REP1-056.88:** We welcome the Applicant's response and consider this issue now resolved.

76. **REP2-005; para REP1-056.89 to REP1-056.92:** NRW welcomes the final MMP which will be developed post-consent and in line with any new advice and guidance. In addition to the Applicant revisiting the sound modelling post-consent as part of the final UWSMS once project details have been finalised.

This modelling (applying the confirmed project parameters (e.g. hammer energy)) will inform the establishment of a specific mitigation zone for piling, and thus an appropriate MMMP.

77. **REP2-005; para REP1-056.93:** NRW have reviewed the Applicant's response to this matter [PD1-017, section RR-027.43 and RR-027.48] and are satisfied with the Applicant's understanding of Cumulative Effects Assessment.

1.3 Fish and Shellfish

78. **REP2-005; para REP1-056.3:** We note the Applicant welcomes our response, we therefore have no further comments in this instance.

1.4 Physical Processes

79. **REP2-005; para REP1-056.4:** Our response has been noted by the Applicant in relation to physical processes, we therefore have no further comments in this instance.

1.5 Benthic Subtidal and Intertidal Ecology

80. **REP2-005; para REP1-056.5:** Our response has been noted by the Applicant in relation to benthic subtidal and intertidal ecology, we therefore have no further comments in this instance.

1.6 Biodiversity Benefit

81. **REP2-005; para REP1-056.6:** We note the Applicant welcomes our response, we therefore have no further comments in this instance.

1.7 Designated Landscapes/Seascapes

82. **REP2-005; para REP1-056.7:** Our response has been noted by the Applicant in relation to physical processes, we therefore have no further comments in this instance.