Ein cyf/Our Ref: AOS-21167-0032
Eich cyf/Your ref: EN010137
Our Unique Ref: 20048445

Natural Resources Wales
Welsh Government Offices
Cathays Park
King Edward VII Avenue
Cardiff
CF10 3NQ

Ebost/Email:
marine.advice@cyfoethnaturiolcymru.gov.uk

The Planning Inspectorate
Temple Quay House
2 The Square
Bristol
BS1 6PN

By email: monaoffshorewindproject@planninginspectorate.gov.uk

Dyddiad/Date: 03 December 2024

Er sylw / For the attention of: Jake Stephens

Annwyl / Dear Jake,

FFERM WYNT ALLTRAETH MONA / PROPOSED MONA OFFSHORE WINDFARM

CYFEIRNOD YR AROLYGIAETH GYNLLUNIO / PLANNING INSPECTORATE REFERECE: EN010137

EIN CYFEIRNOD / OUR REFERENCE: 20048445

RE: NATURAL RESOURCES WALES' DEADLINE 5 SUBMISSION

Thank you for your Rule 8 letter, dated 23 July 2024, requesting Cyfoeth Naturiol Cymru / Natural Resources Wales' (NRW) comments regarding the above.

Please find below NRW's Deadline 5 submission, which comprises advice on the submissions produced by the Applicant and received at Deadline 4 on 04 November 2024.

These representations and attachments should be read in conjunction with advice previously provided into the examination, and our further submissions at Deadline 5, which includes responses to the ExA's second round of written questions, and our comments on the Report for the Implications on European Sites.

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.

For the purpose of clarity, comments from NRWs Marine Licencing Team (NRW MLT) are titled as such and are produced in section 3; all other comments pertain to NRW's advisory (NRW (A)) role.

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.

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 Emma Lowe [redacted]@cyfoethnaturiolcymru.gov.uk) [redacted]@cyfoethnaturiolcymru.gov.uk) and [redacted]@cyfoethnaturiolcymru.gov.uk) should you require further advice or information regarding these representations.

Yn gywir / Yours sincerely,

[redacted]

[redacted]
Marine Services Manager
Natural Resources Wales

[CONTINUED]

Contents

Summary

1. NRW (A) note that whilst several matters have been resolved, there remain issues with particular respect to marine ornithology, and seascape landscape impacts.

2. We have several outstanding concerns regarding marine ornithology, our main concerns are noted here. With regard to the Cumulative Effects Assessment (CEA), the Applicant has not included quantitative figures for the additional projects identified as having data (e.g. Llŷr 1), or updated figures since the PEIR stages of other Irish Sea projects, which are now available for Morgan and Morecambe Generation Assets. The Applicant has also included different figures for the Mona project in the in-combination assessments to those predicted and assessed in the project alone assessments. Additionally, we continue to disagree with the Applicant's use of the non-breeding season stable-age structures from Furness (2015) for age-class apportioning in the breeding season in the in-combination assessments. We consider that the Applicant's use of this approach risks significantly underestimating in-combination impacts on adult breeding birds. With regard to European sites, our position remains that although we are able to agree to no Adverse Effects on Site Integrity (AEoSI) for the project alone for all Welsh SPAs/Ramsars with the exception of Liverpool Bay SPA, we consider it inappropriate to comment on the potential significance of in-combination impacts presented at this stage for relevant Welsh designated sites.

3. With respect to seascape and landscape impacts, our concerns remain with the Applicant's underestimation of landscape value, and the influence this has had on other conclusions within their seascape, landscape and visual impact assessment (SLVIA). Whilst the difference between high and very high may not appear to be significant, undervaluing the importance of the Isle of Anglesey National Landscape (NL) in this way, together with underestimating the magnitude of change, has resulted in an assessment which underestimates the significance of the harm to the NL. For the avoidance of doubt, the same approach was applied to undervaluing the special qualities of the Eryri National Park. In addition, the submitted new images and updated Zone of Theoretical Visibility (ZTV) figures should be viewed alongside our previous advice to the Examination regarding the impacts upon nationally designated landscapes in North Wales.

4. Please see the main body of text in sections 1-3 below for further comments on the issues noted above as well as advice on other offshore and onshore matters.

1 OFFSHORE

1.1 Marine Ornithology

1.1.1 Comments on Updated Environmental Statement: Volume 2, Chapter 5: Offshore Ornithology F03 [REP4-007: clean; REP4-008: tracked]

1.1.1.1 General Comments

5. We welcome that in REP4-007/008 the Applicant has corrected the following:

    - The minor errors/discrepancies NRW (A) identified in its Deadline 3 responses [see Annex A of REP3-090] on the Applicant's Deadline 2 updated version of the ES Chapter 5: Offshore Ornithology Chapter [REP2-016]. We welcome these amendments and agree with the corrections.

    - The errors in the abundance figures included for other offshore wind farm projects with data available that are included in the cumulative displacement assessment tables, which had been identified in the Applicant's '*Offshore Ornithology Errata Clarification Note*' submitted by the Applicant in REP3-073;

    - Errors in collision figures included for other projects with data available that are included in the cumulative collision assessment tables, and which had been identified by the Applicant.

6. We are in agreement with these corrections and we also welcome that the Applicant has updated the cumulative assessment text to account for these corrections.

1.1.1.2 Detailed Comments

7. However, we note that the cumulative assessments in the updated Environmental Statement (ES) Chapter 5 [REP4-007/008] have not been updated to include the gap-filled projects and so this information, and hence cumulative effects assessments including these projects, remain in a separate document, i.e. in the CEA and gap-fill document [REP4-028]. As we consider that the gap-filled results in REP4-028 provide the most comprehensive estimate of mortalities at each project that was previously not quantified, we recommend that the Applicant includes the gap filled projects, and any other updates to project numbers (e.g. those relating to the Morgan and Morecambe Generation Assets projects etc.), in the cumulative assessments within a final version of the ES Offshore Ornithology Chapter. Otherwise, the various aspects of the cumulative assessments and the relevant updates are located in multiple documents; combining everything into one place (i.e. the cumulative assessment section of the ES Chapter) will avoid confusion as to the total indicative cumulative numbers resulting from inclusion of all numbers and updates to numbers. This will be important for future projects using the information presented by Mona for their respective assessments.

1.1.1.2.1 Great black-backed gull cumulative assessment and Population Viability Analysis (PVA)

8. The great black-backed gull (GBBG) cumulative collision assessments presented in REP4-007/008 are based on the original advised breeding season reference population, and hence largest seasonal Biologically Defined Minimum Population Scales (BDMPS) population of 44,753 individuals (breeding season and annual assessment). As was noted to the Applicant during the gap-fill approach call with the SNCBs on 29 August 2024, the SNCBs noted that there were updates to the breeding season GBBG reference populations and that these were included in interim NE/NRW advice provided to the Applicant by Natural England in March 2024. The revised south-west and Channel BDMPS GBBG breeding season reference population was 13,424, meaning that the largest BDMPS to use for Environmental Impact Assessment (EIA) annual impact assessment was the non-breeding season figure of 17,742 from Furness (2015). Further details regarding this can be found in Appendix E of the Applicant's updated CEA and gap-fill document [REP4-028]. We note that the Applicant undertook a PVA based on using the revised recommended largest population of 17,742 individuals as the starting population in Appendix D of the CEA and gap-fill document [REP3-044 and updated version in REP4-028]. The Applicant states in paragraph 1.1.2.9 of REP4-028 that Volume 2, Chapter 5: Offshore ornithology [REP4-007/008] has not been updated to use the GBBG reference population from the NRW and NE interim advice note as this is not considered to be errata.

9. However, in order to avoid confusion with assessments using different reference populations, and different PVAs in different documents relating to cumulative effects, we suggest that the cumulative assessment in the ES Chapter should be updated to account for this change to the advised GBBG breeding (13,424) and largest seasonal population (17,742) and discuss the PVA undertaken for this starting population.

1.1.1.3 Minor Comments

10. We also note a minor comment that in paragraph 5.9.3.2 of REP4-007/008, the Applicant incorrectly references the Ozsanlav-Harris *et al*. report as data 2015, when this reference is actually dated 2023.

1.1.2 Comments on Offshore Ornithology Assessment of Pen y Gogarth/Great Orme's Head SSSI [REP4-025 clean; REP4-026 tracked]

11. We welcome the additional work undertaken by the Applicant in the updated Pen y Gogarth / Great Orme's Head Special Site of Scientific Interest (SSSI) Assessment [REP4-025]. We are content with the approaches taken for the assessment of the predicted impacts from the project alone.

12. We also welcome that the Applicant has now undertaken a cumulative assessment of impacts to this SSSI. However, there are aspects of the cumulative assessments that we do not agree with, namely:

- We do not agree with the use of the non-breeding season stable-age structures from Furness (2015) for age-class apportioning in the breeding season. We consider that the Applicant's use of this approach risks significantly underestimating cumulative impacts on adult breeding birds. Further details regarding this can be found in our comments on in-combination assessments in the Applicant's '*Supporting Information in line with SNCB Advice*' document, REP4-030. We reiterate our advice provided on the in-combination assessments regarding this that where there is site-specific information on breeding season age class proportions then this should be applied for the site in question in the in-combination assessments, otherwise it should be assumed that all birds are adults.

- The Applicant has included different figures for the Mona project alone in the cumulative assessments to those predicted in the alone assessment. We assume this is because different apportionment approaches have been taken for the alone and cumulative assessments, as has also been done in the in-combination assessments in REP4-030 (different non-breeding season apportionment approach and use of Furness (2015) stable age structures for age class apportionment in the breeding season in the in-combination).

- We also consider that the figures included for the Morgan Generation and Morecambe Generation Assets projects should be updated to account for the best available evidence for these projects, i.e. update the Preliminary Environmental Information Report (PEIR) figures to the submission figures.

13. Whilst we consider that the cumulative totals presented in REP4-025 are likely to be underestimates, we can agree that the project alone and cumulatively with other plans and projects is unlikely to have a significant adverse effect (i.e. not greater than minor adverse) for the guillemot and razorbill features of the SSSI. This is based on consideration of the RSPB hotspot mapping and utilisation distribution mapping data (covers guillemot, razorbill, kittiwake and shag[1]), which suggests that the Mona project area is not a key foraging area for guillemot and razorbill from the colony and are therefore unlikely to be affected. Additionally, the guillemot and razorbill populations at the site have both increased by nearly 60% between 2002 (when the site was enlarged) and 2023 (data from SMP: Seabird Monitoring Programme | JNCC) and over this time many of the offshore wind farms (OWFs) included in the cumulative assessments have been constructed and become operational. Hence as the colony populations have continued to increase, it would suggest they have not been adversely impacted by the operation of the OWFs.

14. However, the kittiwake colony of the SSSI is decreasing, but not at a rate that has been seen at other UK kittiwake colonies. Based on this, and that the

[1] RSPB open Data: RSPB Open Data

Applicant's PVAs suggest that the population would remain stable due to the project alone impact and that the population would decline due to the cumulative impact, we consider that the predicted cumulative collision impacts as presented, which are likely to be underestimated, have the potential to give rise to a moderate adverse impact.

15. As noted, the predicted level of cumulative impacts, which includes consideration of the gap filled historical projects, to the kittiwake feature of the Pen y Gogarth / Great Orme's Head SSSI are at level of concern. In the case of the Mona OWF project, we recognise and welcome the commitment already made to raise turbine draught height to 30m above Mean Sea Level (Environmental Statement - Volume 6, Annex 5.3: Offshore ornithology collision risk modelling technical report Table 1.5, APP-093). Therefore we are content that the Applicant has provided proportionate mitigation for kittiwake at this site.

1.1.3 Comments on Offshore Ornithology Cumulative Effects Assessment and In-combination Gap-filling Historical Projects Technical Note F02 [REP4-028: clean; REP4-029: tracked]

16. We welcome that the CEA and gap filling document has been updated in REP4-028 to include the following:

    - Updates to numbers following updates in the ES Chapter [REP4-007] and the displacement technical report [REP4-009].

    - Use of the full breeding season for GBBG, kittiwake and gannet, which is in line with SNCB advice and with that used in the updated ES Chapter [REP4-007].

    - Presentation of a comparison of the proportion of birds in flight calculated on annual, seasonal and monthly bases in Appendix F of REP4-028, which was advised by the SNCB's during the meeting on 29^{v}August 2024.

17. We are in agreement with these amendments/additions.

1.1.3.1 Detailed Comments

18. We welcome and agree that the in-combination assessment section that was presented within the previous version of the CEA gap filling report submitted at Deadline 3 [REP3-044] has been removed from the updated Deadline 4 version [REP4-028] and moved to the updated '*Offshore Ornithology Supporting Information in line with SNCB Advice*' document [REP4-030 – please see our separate comments at 1.1.4 below on this document]. We note that this approach means that all the in-combination assessments for Special Protection Areas (SPAs)/Ramsars are now brought together in one place. However, as these in-combination assessments incorporating the gap-fill projects provide the most comprehensive estimate of mortalities at each project that were previously not quantified, we recommend that the Applicant includes these assessments within an updated Habitats Regulations Assessment (HRA) Stage 2 Information to Support Appropriate Assessment (ISAA) Part 3 (SPAs and

Ramsars) document by the end of the examination. This is because the HRA Stage 2 ISAA Part 3 document is where this information would typically be expected to be found and would be where future projects will most likely look to find this information.

19. We do however, note our separate comments on the Applicant's '*Review of Offshore Ornithology CEA and In-Combination Assessment*' document [REP4-027]. As the Applicant has not included quantitative numbers for the additional projects identified, nor have they updated the figures included for the Morgan Generation and Morecambe Generation Assets projects to the best available figures for these projects (i.e. those from the submissions), we defer comment on cumulative and in-combination impacts and their potential significance until the figures for these projects are included in the cumulative and in-combination assessments.

20. Whilst we are still unable to reach agreements on the significance of cumulative impacts, our advice regarding EIA scale cumulative GBBG collisions remains as set out in our Deadline 4 advice [paragraph 93 of Annex A of REP4-105], i.e. we are unable to rule out a moderate adverse, i.e. significant adverse impact.

1.1.3.2 Minor Comments

21. Table 1.25 of REP4-028 suggests that PVAs have been run for cumulative guillemot impacts for scenarios of 30% displacement and 1% mortality (i.e. 284 mortalities), 50% displacement and 1% mortality (i.e. 473 mortalities) and 70% displacement and 10% mortality (i.e. 6,618 mortalities). However, the PVA inputs in Appendix B of REP4-028 suggest that the only impact scenarios run have been for 30%, 50% and 70% displacement, all with a 1% mortality. Whilst it looks like this is just an error in the incorrect input scenario having been deleted from Appendix B and that the correct worst case scenario impact has actually been run through the PVA, the Applicant should check this and clarify exactly which impact scenarios PVAs have been run for.

22. With regard to '*NE/NRW interim advice regarding demographic rates, EIA scale mortality rates and reference populations for use in offshore wind impact assessments*', we note that this document is in the public domain as was submitted within Natural England's Relevant Representation at Morecambe Generation Assets: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010121/EN010121-000449-Natural%20England%20RR%20Stitched.pdf

1.1.4 Comments on Offshore Ornithology Supporting Information in line with SNCB advice [REP4-030 clean; REP4-031 tracked]

1.1.4.1 Overall comments

23. We note that this document essentially contains an updated HRA Stage 2 ISAA Part 3 (SPAs and Ramsars).

24. We welcome that REP4-030 sets out information to clarify the apportionment approaches that have been used with regard to apportioning impacts from other projects in the in-combination assessments. However, given that REP4-030 is titled '*Offshore ornithology supporting information in line with SNCB advice*' it is disappointing that in the document the Applicant has still not followed aspects of the advice provided by the SNCBs, e.g. use of stable age structures for age class apportioning in the breeding season for projects included in the in-combination assessments - provided by both NRW and JNCC to the Applicant on the call dated 29 October 2024, and in our Deadline 4 response [REP4-105]. Further detail regarding this is set out in **Section 1.1.4.1.1.4.3** below. As a result, our position remains that we consider it inappropriate at this stage to comment on the potential significance of in-combination impacts presented for relevant Welsh designated sites.

25. However, NRW (A) and JNCC had a productive call with the Applicant on 22 November 2024 to discuss these issues and a potential approach to rectifying them. The Applicant has sent both NRW (A) and JNCC some updated in-combination tables for the sites of relevance to NRW (A) and JNCC on 28 November 2024. We understand the Applicant will be submitting this information into the examination at Deadline 5. Therefore we hope to be able to provide advice on levels of in-combination impact and site integrity for Welsh sites as soon as possible following Deadline 5.

1.1.4.2 Habitats Regulations Assessment (HRA) scale impacts from Mona project alone

26. Our advice/conclusions regarding impacts from the project alone remains as set out in our Deadline 4 response; i.e. that the predicted impacts from the Mona project alone are predicted to be small and hence an adverse effect on site integrity (AEoSI) can be ruled out for the features of the respective Welsh SPAs assessed (see Appendix 1 of Annex B of REP4-105).

1.1.4.3 HRA scale impacts from Mona project in-combination with other plans and projects

27. We welcome that the Applicant has included the gap-filled historic projects in the in-combination assessments undertaken in REP4-030 and we welcome that all the in-combination assessments are now included in this document rather than being spread between the CEA gap-fill document and the *supporting information in line with SNCB advice* as was the case at Deadline 3 (in documents REP3-044 and REP3-058).

28. We welcome that the Applicant has provided further information on the approaches they have taken to apportioning impacts to sites from projects included in the in-combination assessments. However, following this we have some significant concerns regarding the Applicant's approach to this and consider that the approach risks underestimating the potential levels of in-combination impacts. As a result of this, and that the Applicant has still not updated the Morgan generation and Morecambe Generation figures to be those in the submission documents (which represent the best available evidence for

these projects) or included quantitative figures for the additional projects identified (see comments on REP4-027), our position remains that we consider it inappropriate at this stage to comment on the potential significance of in-combination impacts presented for relevant Welsh designated sites.

1.1.4.3.1 Apportionment of impacts from other projects in the non-breeding season

29. Based on the information provided by the Applicant detailing their approach to non-breeding season(s) apportionment for the in-combination assessment in the '*Offshore Ornithology Apportioning Clarification Note*' [REP4-042], we agree that the Applicant's approach to apportioning impacts in the non-breeding season to other projects included within the in-combination assessments would result in the same (given rounding differences) apportioned non-breeding season impacts as if our advised standard approach was followed. Therefore, we are generally content with the Applicant's approach for these seasons.

1.1.4.3.2 Apportionment of impacts from other projects in the breeding season

30. We have already advised the Applicant that we do not agree with the use of the Furness (2015) non-breeding season stable-age structures for age-class apportioning in the breeding season. We note that Furness (2015) does not present a stable age structure for the breeding season, the report covers purely the non-breeding season(s). The UK Western waters (and for some species the Channel in addition) area is vast, incorporating all territorial waters to the west of Cornwall in the south, and Orkney in the north. The ratio of adults to immature birds over such a large area are likely to be highly spatially variable, and there is no basis for the assumption that the ratio is applicable at a small project study area, which is essentially what the Applicant is doing when age class apportioning predicted EIA scale impacts for each individual project included in the in-combination assessment. In fact, it is noted by Furness (2015) that: *"at sea distribution of seabirds differs between age classes, with youngest birds tending to spend their time in the winter quarters even during summer, breeding adults tending to stay closest to their breeding area, and immature birds probably at sea in areas that have good food supplies, but are away from large colonies. Therefore, it is not clear that any at sea data on proportions of different age classes would provide a secure test of the estimated proportions based on demographic data."*

31. The Mona project in their alone assessments has used the proportions of adults recorded in the breeding season in the site-specific digital aerial survey (DAS) data, and for species where age-class identification was not possible from site-specific DAS then it was presumed that 100% of birds were adults, which is in line with SNCB advice. Site-specific breeding season age class data are available for some of the other projects included in the in-combination assessment (see **Table 1** below for the species that are features of Welsh sites assessed for in-combination) and we therefore advise that this information is used for these projects. We also note that **Table 1** below indicates that the proportions of adult birds of these species recorded in the surveys for these projects are higher than those from the Furness (2015) stable-age structures

used by the Applicant. ***Therefore, we consider that the Applicant's approach of apportioning according to the stable age structure ratio risks significantly underestimating in-combination impacts on adult breeding birds.***

Table 1 Proportions of adult gannet and kittiwake recorded in site-specific DAS data in breeding season at individual projects compared with stable-age structures used by the Applicant for breeding season age-class apportioning in the in-combination assessments in REP4-030

Species	Site-specific proportions of adults from DAS data					Breeding season adult % used by Applicant (from Furness 2015)
	Mona*	Morgan Generation**	Morecambe Generation***	Awel y Môr****	Erebus*****	
Gannet	93.58%	94.94%	73.8%	93.3%	99%	55.25%
Kittiwake	95.36%	84.11%	96%		100%	53.2%

* From Table 1-4 of REP4-030
** Based on information provided in Table 1.4 of submission ES Volume 4, Annex 5.5: Offshore ornithology apportioning technical report: F4.5.5_Morgan_Gen_Offshore Ornithology Apportioning TR
*** Based on information provided at submission in Appendix 12.2 Aerial Survey Two Year Report March 2021 to February 2023: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010121/EN010121-000264-5.2.12.2%20Appendix%2012.2%20Aerial%20Survey%20Two%20Year%20Report%20March%202021%20to%20February%202023.pdf
**** Based on information provided in Table 16 of Report to Inform Appropriate Assessment: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010112/EN010112-000144-5.2_AyM_RIAA_vFinal.pdf
***** Based on information in Offshore Ornithology 11.1 Technical Appendix - Baseline Data: https://www.bluegemwind.com/wp-content/uploads/2020/07/Erebus-ES-Vol-3-Appendix-11.1-Baseline-Data-2.pdf

32. Therefore, we reiterate our Deadline 4 advice regarding this issue: unless specific breeding season age-class information is available for each of the other projects included in the in-combination assessments, we consider that the most appropriate approach would be to be precautionary and assume all birds were adults (see Annex B of REP4-105).

33. In paragraph 1.3.4.4 of REP4-030, the Applicant states that there is precedent for the use of stable-age structures as they have recently been used by both NE and NRW within their interim advice regarding demographic rates, EIA scale mortality rates and reference populations for use in offshore wind impact assessments using a similar method to Furness (2015). Whilst we note that this advice did use stable-age structures, we note that this was regarding a completely different scale – EIA and was not related to apportioning of age classes at an individual project level and for HRA scale. Therefore, there is no precedent for its use at this scale in question here.

34. We also note that the SSSP SPA razorbill in-combination assessment (Table 1-63 of REP4-030) does not include any consideration of impacts in the breeding season, which does not appear correct as there are projects included in the in-combination assessment that are within foraging range of this colony and hence should have impacts apportioned in breeding season, e.g. Erebus.

1.1.4.3.3 Figures included for the Mona project in the in-combination assessment

35. We note that the Applicant has followed different approaches to apportionment of impacts to designated sites for the Mona project alone assessments and in-combination assessments. This results in different apportioned seasonal and annual predicted impacts for the Mona project alone assessments and those included for the Mona project in the in-combination assessments. We consider this to be an inappropriate approach and advise that the apportioned figures used in the Mona project alone should be taken through and included for the Mona project in the in-combination assessments. Therefore, we strongly advise that the Applicant updates the Mona project figures included in the in-combination assessments to be consistent with those assessed in the project alone assessments.

1.1.5 Comments on Offshore Ornithology Apportioning Clarification Note [REP4-042]

36. We note that REP4-042 specifically covers clarification on non-breeding season apportionment methods the Applicant has used for project alone and in-combination assessments. The note does not cover breeding season apportionment, which is covered in Section 1.3.4 of the '*Offshore Ornithology Supporting Information in line with SNCB Advice*' document [REP4-030], i.e. a separate document.

1.1.5.1 Approach to non-breeding season apportionment for project alone assessments

37. We welcome the further detail provided by the Applicant on their approach for non-breeding season apportionment (including for age-class proportions and apportioning) set out in REP4-042. From the comparisons of the resultant apportionment rates from the different approaches presented in Table 1.2 of REP4-042, we note that the Applicant's rates are again higher than those resulting from the standard approach advised by NRW (A). Therefore, we again note that the Applicant's approach can be considered precautionary and our advice and conclusions provided at Deadline 4 [see Annex B of REP4-105] regarding levels of significance of impacts from the project alone remain unchanged, i.e. that an adverse effect on site integrity (AEoSI) can be ruled out for features of the Welsh SPAs/Ramsars assessed by the Applicant.

1.1.5.2 Approach to non-breeding season apportionment for in-combination assessments

38. We note the information provided by the Applicant in Section 1.4.2 of REP4-042 that details their approach to non-breeding season apportionment calculations applied for all other wind farm projects in the in-combination assessment. We note that from the examples given, the Applicant's approach does eventually result in the same overall apportionment as following the standard NRW (A) advised approach does. Therefore, we consider that this should mean that the same apportioned in-combination total impacts should

result for the non-breeding season(s) from the two approaches. However, we consider that the Applicant has taken an unnecessarily complex approach to essentially calculating the equivalent to the NRW (A) advised approach. Please also see our comments on the Applicant's updated '*Offshore ornithology supporting information in line with SNCB advice 02*' document [REP4-030] at 1.1.4.

1.1.6 Comments on Updated Environmental Statement: Volume 6, Annex 5.2: Offshore Ornithology Displacement Technical Report F03 [REP4-009: clean; REP4-010: tracked]

39. We welcome and agree with the updates made to the Manx shearwater spring migration/pre-breeding season abundance figures and displacement matrices in REP4-009/010.

1.1.7 Comments on Mitigation and Monitoring Schedule [REP4-013: clean; REP4-014: tracked]

40. No further comments

1.1.8 Comments on Review of Offshore Ornithology CEA and In-Combination Assessment [REP4-027]

41. We note that REP4-027 is a purely qualitative review of the cumulative and in-combination conclusions made by the other projects identified by the Mona Applicant that now have assessments and hence data available to include in the Mona cumulative/in-combination assessments. The Applicant has essentially just summarised whether the Mona project has been included in the other projects' cumulative/in-combination assessments or not, and listed how the project has been included (i.e. quantitatively or qualitatively) and then summarised the projects in questions' conclusions in terms of significance of cumulative/in-combination totals. We do not consider this is appropriate, as if quantitative figures are available for these additional projects and there is potential connectivity for these projects with the populations potentially also impacted by Mona (i.e. located within the same respective BDMPS area or within foraging range of a relevant colony), then the quantitative figures should also be included in Mona's cumulative/in-combination assessments. We consider this to be particularly important regarding inclusion of updated figures for the Morgan Generation and Morecambe Generation Assets projects to the best available evidence currently in the public domain (i.e. the submission documents rather than the PEIR figures that were based on only 12 months of data). We again stress that as the Mona, Morgan Generation and Morecambe Generation Assets projects are all located in Irish Sea and are in examination at the same time, there is a need for all projects to be undertaking cumulative and in-combination assessments covering the same list of projects and assessing the same cumulative/in-combination totals. Otherwise, there will be the potential for different conclusions to be drawn as to the levels of significance, depending on the total impacts considered.

1.1.9 Comments on Applicant's Response to NRW Deadline 3 Submission [REP4-047]

42. We welcome the additional work the Applicant has submitted at Deadlines 3 and 4 regarding offshore ornithology since our Deadline 3 submission [REP3-090]. Therefore, rather than responding to each individual point within REP4-047 regarding offshore ornithology, we refer the Applicant and ExA to the offshore ornithology related sections of our Deadline 4 response – Section 1.1, Annex A and Annex B of REP4-105 and to our Deadline 5 responses on the following Deadline 4 documents submitted by the Applicant:

    - Updated Environmental Statement: Volume 2, Chapter 5: Offshore Ornithology F03 [REP4-007]
    - Offshore Ornithology Assessment of Pen y Gogarth/Great Orme's Head SSSI [REP4-025]
    - Review of Offshore Ornithology CEA and In-Combination Assessment [REP4-027]
    - Offshore Ornithology Cumulative Effects Assessment and In-combination Gap-filling Historical Projects Technical Note F02 [REP4-028]
    - Offshore Ornithology Supporting Information in line with SNCB advice [REP4-030]
    - Offshore Ornithology Apportioning Clarification Note [REP4-042]
    - UXO Clearance Position Statement [REP4-086]

1.1.10 Comments on UXO Clearance Position Statement [REP4-086]

43. We note that this document was drafted in response to JNCC concerns. We note that there is no mention of marine birds and Liverpool Bay SPA (red-throated diver and common scoter) in the UXO Clearance Position Statement, REP4-086 – the information relates to marine mammals and fish. However, we do note that paragraph 1.3.1.2 of REP4-086 describes a Maximum Design Scenario (MDS) of up to 22 UXOs to be cleared within the Mona Array Area and Offshore Cable Corridor and Access Areas that were assessed within the Volume 2, Chapter 4: Marine mammals [APP-056] and Volume 2, Chapter 3: Fish and shellfish ecology [APP-055]. We note that this MDS for UXO clearance has not been assessed within Volume 2, Chapter 5 Offshore Ornithology F03 [REP4-007] or within the Liverpool Bay SPA assessment within the updated HRA Stage 2 ISAA Part 3 (SPAs and Ramsars) F02 [REP2-010]. We consider that this should be assessed and note the question 3.3.9 within Table 3.3 to the Applicant in the Report on the Implications for European Sites (RIES) [PD-019] regarding pre-commencement works, UXO surveys and clearance and guarding vessels. Specifically, we note the request for the Applicant to provide evidence as to why it considers no AEoSI would occur from these activities. Until this information is provided by the Applicant, we are unable to rule out an AEoSI on the red-throated diver and common scoter features of the Liverpool Bay SPA from either the project alone or in-combination. However, we do note that if the seasonal restriction on cable installation works was to also include pre-commencement activities, such as UXO clearance, then we would be able

to agree that an AEoSI could be ruled out for these features of the SPA from the project alone and in-combination.

44. However, we understand from recent correspondence with the Applicant (02 December 2024), that it is their intention to remove high-order clearance options from the draft development consent order (dDCO), its associated deemed Marine Licence (dML), and the stand alone Marine Licence, and that the seasonal timing restriction on the cable activities within Liverpool Bay SPA will also be applied to the low-order UXO clearance. Once this information is submitted into the examination at Deadline 5, we will provide further advice with respect to the above.

1.2 Marine Mammals

1.2.1 Comments on response to NRW Deadline 3 Submission [REP4-047]

1.2.1.1 REP3-090.66 - REP3-090.72

45. We acknowledge the Applicant's response, and note that this issue was discussed at a meeting on Friday 8 November 2024, where it was agreed that for the purposes of the Statement of Common Ground (SoCG), the position status of this matter would be noted as "*not agreed – no material impact*," with the Applicant agreeing to clarify that the estimates of the number of animals disturbed represent a conservative estimate at a single point in time from a single vessel (i.e. "a snapshot").

46. In our Deadline 4 submission, NRW (A) explained that the main reason for our concern was that in our view a static radius did not capture the cumulative impact of a pathway which consisted of chronic, but individually relatively small disturbance events from a moving source / sources. While we agreed with the Applicant that recovery from vessel noise disturbance took place relatively rapidly, we did not agree with the general assumption underpinning the Applicant's approach that because recovery from a single disturbance event would be rapid, then there would not be an effect from repeated episodes of disturbance as a result of there being multiple vessel trips in the area.

47. We explained that in principle we had no concerns with the use of a fixed impact radius to provide a snapshot estimate of numbers disturbed at one point in time, and we also fully agreed with the Applicant that the radius selected was a conservative one. However, we advised that the Applicant needed to be clear in the assessment that the estimate was a snapshot at a single point in time, otherwise it would be inaccurate to state that e.g. 0.02% of the harbour porpoise Management Unit (MU) will be disturbed, particularly so that future projects drawing down information from the Mona Offshore Windfarm ES application have access to the correct information.

48. We draw attention to the fact that the most recent version of the DEPONS[2] model for simulating population effects of noise for harbour porpoises (V3.0)

[2] https://depons.eu/

now makes it possible to simulate the population impact of noise from ships. Similarly work is being done to further develop Dynamic Energy Budget (DEB) models for their eventual inclusion into the Interim Population Consequences of Disturbance (iPCoD) framework (Harwood et al 2022), noting that King et al (2015) suggested that other impact pathways (such as noise from seismic surveys and / or vessels) can be included into iPCoD by using estimates of the number of animals predicted to be disturbed by these activities and their extent in time and space.

49. Given that agreement was reached on a way forward, we consider this matter closed.

1.2.1.2 REP3-090.77

50. NRW(A) acknowledges and welcomes the statement from the Applicant that they are committed to implementing a suitable approach for monitoring underwater sound from the impact piling of the first four foundations in agreement with the relevant SNCBs. We understand that at present it may not be possible to confirm a provider.

51. We point out that ISO18406:2017 was intended as a generic approach to be compatible, without significant additional effort, with the measurement methodologies of countries which currently require measurements of piling for regulatory purposes. It reflects and was based on existing guidance and good practice for noise measurements used in countries such as Germany, the Netherlands, the UK (NPL Good Practice Guide No. 133), and the US. As the standard was published in 2017 we would expect service providers to use a methodology which meets existing guidance and the requirements in the standard.

52. Key features include requirements for:

- At least one measurement location which measures the entire piling sequence. If only one range used, it shall be 750 m from the pile.
- Recommends additional measurement locations along specified transects, the minimum measuring distance being three times the water depth.
- A hydrophone depth of >2 m above the seabed and >half the water depth, ideally using two hydrophones where possible
- Measurement bandwidth covering the frequency range 20 Hz to 20 kHz, with the hydrophone calibrated over the full range of interest
- Use of terms and reporting of metrics to be consistent with ISO 18405:2017, the new standard on ‘Underwater acoustical terminology’.

53. To provide consistency and comparability the standard provides information on how to calculate these metrics. It also covers recommendations on choice of hydrophone, instrumentation, deployment etc - all of which are covered in NPL GPG No. 133.

1.2.1.3 REP3-090.78

54. Whilst we still consider that it would be helpful for the report to provide additional clarity with respect to the MDS for the Offshore Substation Platforms (OSPs) – this is for completeness and in order to help future projects using the Mona information in their project considerations - we note the Applicant's response which states that they do not consider an update is necessary. We have no further comments in this regard.

1.2.1.4 REP3-090.79 - REP3-090.82

55. NRW (A) confirms that we still agree that "*this does not materially affect the conclusions, since assessment results were based on the full response modelled range of disturbance*".

56. We also confirm that we are in full agreement that particularly given the findings and strong body of evidence from the RADIN project (ORJIP 2024), which built on the work of Martin et al. 2020 and Graham et al. 2019, there is no reasonable doubt that changes in impulsivity affect the rate of Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS) growth. Similarly, criteria for TTS and PTS onset are based on cumulative exposure over all impulsive noise events, without taking into account recovery of hearing between successive impulses and as a result this leads to overestimates of the range of TTS and PTS onset. Some studies have also shown that exposures to noise with equal cumulative sound exposure level (SEL_{cum}) but with different lengths of time between noise pulses do not result in the same amount of TTS (e.g. Kastelein et al 2014; von Benda Beckman et al 2020, 2022). This information is also outlined in our relevant position statement on assessing the effects of hearing injury (NRW 2023). We therefore would like to clarify that this matter related solely to behavioural disturbance.

57. We agree with the Applicant that the probability of a response is influenced by an interplay between a number of factors. Among others these include environmental factors (e.g. water depth, temperature, sediment type) which can impact noise propagation, aspects of the sound (e.g. waveform, length of signal, continuous / intermittent exposure), and contextual factors related to the animals themselves (e.g. differences between species and individuals, group effects, and situational contexts such as foraging, breeding, presence of calves, previous exposure to a noise etc). However, the extent of the importance of each of these in influencing behaviour is currently not well known. In their 2021 publication, Southall et al. presented a framework to guide future data collection efforts on noise disturbance where it was recommended that when collecting behavioural response data, a number of contextual metrics should also be recorded in a comprehensive and consistent manner. Future studies accounting for these would provide far more accurate probability functions for predicting behavioural effects.

58. In their framework, Southall et al. (2021) drop the approach of categorising sound as either "impulsive" or "non-impulsive" because of the wide diversity of sound types, including some noise sources which produce impulsive sounds

near the source but non-impulsive sounds at greater ranges. They explain that these categories were geared more towards evaluating auditory effects such as temporary threshold shifts in hearing (but are less suitable for evaluating behaviour). Instead, their framework groups sounds by operational source types (e.g. pile driving, sonar, seismic air guns etc) that share some general contextual similarities, and advocates reporting a wide number of acoustic metrics to more comprehensively describe the noise signals. Our understanding is that this is done to capture as many potential variables that may impact behavioural response to support integrated analyses of exposure-response relationships.

59. The publication does not make any conclusions regarding the impact (or extent of the impact) of changes in impulsivity on disturbance. Our view remains that Par 1.5.7.4 of APP-079 presents a message from a scientific publication as a more definite fact, applying it without the uncertainty and nuance that should accompany it.

60. As mentioned in previous responses we would expect such a statement to be supported by evidence which links changes in impulsivity to declines in the probability of a behavioural reaction (similar to the body of evidence that exists for PTS / TTS), while also accounting for the extent of the influence of other factors. While we do consider it likely that changes in impulsivity will have some effect on the probability of a behavioural response, particularly when applying thresholds at ranges further away than the observations on which they were based, the degree of this effect is currently unknown and it is also possible that the overall impact may be small or negligible compared to other factors. The statement that "*great caution should be used when interpreting potential disturbance ranges in the order of tens of kilometres*" (Section 1.5.7 of APP-079) which suggests that existing dose response curves are over-precautionary, requires analysis based on data collected in the field, and at present there is insufficient evidence to conclude this.

61. While this matter is principally an academic discussion with no material impact on the result, we stress the importance of presenting a nuanced approach when making statements about aspects of disturbance from underwater noise for which where there are still high levels of uncertainty. Although we still recommend that ideally the Applicant clarify the hypothetical nature of their statement, and that the discussions on this matter are taken onboard for future applications, we agree that this discussion has run its course and can consider this matter closed.

1.2.2 Comments on UXO Clearance Position Statement [REP4-086]

62. We note that this document was drafted in response to the concerns raised by JNCC with respect to UXO clearance. However, we note that this matter is also of importance to NRW (A). Our position on the use of different UXO clearance methods (low-order cf high-order) are clearly stated in our written representations [REP1-056], and we confirm that our view remains that all UXO clearance is restricted to low-noise methods only, and that high order clearance should only be used in exceptional circumstances.

63. As previously noted, NRW is currently a signatory to the 2022 Joint Interim Position Statement on UXO Clearance[3]. Please be advised that an updated Position Statement is currently in development (which we are contributing to) and may be published prior to the completion of this examination process. If this is published during the examination process we will draw the Examining Authority and the Applicant's attention to this document immediately.

64. We understand from recent correspondence with the Applicant (02 December 2024), that it is their intention to remove high-order clearance options from the draft development consent order (dDCO) and its associated deemed Marine Licence (dML) as well as the stand-alone Marine Licence. This intention will effectively restrict UXO clearance to low-order methods only. Once this information is submitted into the examination at Deadline 5, we will provide further advice.

1.3 Fish and Shellfish

1.3.1 Comments on UXO Clearance Position Statement [REP4-086]

65. NRW(A) welcome the Applicant's confirmation that they will adhere to the mitigation hierarchy in respect to the UXO clearance activities. We understand from recent correspondence with the Applicant (02 December 2024), that it is their intention to remove high-order clearance options from the draft development consent order (dDCO) and its associated deemed Marine Licence (dML) as well as the stand-alone Marine Licence. This intention will effectively restrict UXO clearance to low-order methods only. Once this information is submitted into the examination at Deadline 5, we will provide further advice with respect to the above.

1.3.2 Comments on Mitigation and Monitoring Schedule [REP4-013]

66. We welcome the updates and changes that have been made to the schedule. These updates suitably correct the previous omissions, as highlighted in our deadline 4 response, with respect to the relevant mitigation documents that apply to fish receptors (including the offshore Environmental Management Plan (EMP), the Marine Mammal Mitigation Protocol (MMMP), and the Underwater Sound Management Strategy (UWSMS)). NRW(A) are now content with this list for fish and consider this matter closed.

[3] https://www.gov.uk/government/publications/marine-environment-unexploded-ordnance-clearance-joint-interim-position-statement/marine-environment-unexploded-ordnance-clearance-joint-interim-position-statement

1.3.3 Comments on Responses to NRW D3 Submissions [REP4-047]

1.3.3.1 REP3-090.83

67. We welcome the amendments made to the relevant documents and confirming that the updated mitigation and monitoring schedule now includes the relevant items that apply to fish.

1.3.3.2 REP3-090.88 - REP3-090.89

68. NRW (A) acknowledge the Applicant's response and that cod is specifically included in the UWSMS. We have previously advised that the specific measures included within the strategy may well be appropriate to mitigate against the noise impacts for spawning cod from the project alone, but that we will need to see the detail of the proposed measures in order to assess their effectiveness. We look forward to seeing additional detail on the strategy as it emerges post-consent and we will continue to provide comment and engagement on the strategy as it is formed.

1.3.3.3 REP3-090.90 - REP3-090.91

69. NRW(A) attended a meeting with the Applicant on the 8 November 2024 in order to agree a way forward on a number of matters relating to fish, particularly seasonal timing restrictions to protect spawning fish species. A follow-up meeting also occurred on 26 November 2024. We understand that for the Deadline 5 submissions, the Applicant is going to provide some additional information on the UWSMS scope in relation to cod protection, to address the project's contribution to the cumulative impacts on spawning cod - which we welcome. Subject to reviewing the final detail of the additional information to be submitted at Deadline 5, we anticipate being able to agree with the proposed changes. For the avoidance of doubt, we do, however, reiterate our position on impacts to cod from the project alone, and consider that if the Applicant is introducing measures to protect cod from the development alone, then the assessment on the alone impacts should be updated to reflect that. This would be particularly important for future projects using the Mona information for their assessments. We welcome further engagement from the Applicant in due course and anticipate that the remaining fish issues can most likely be resolved via communication with the Applicant.

1.3.3.4 REP3-090.97 & REP3-090.99

70. We note and welcome the Applicant's confirmation that NRW (A) will be consulted in writing on the development of the UWSMS. Please see our comments at paragraph 72 above with respect to timing restrictions.

1.3.4 Comments on the Errata sheet [REP4-088]

71. We have no further comments to make on the errata sheet - any errors in relation to fish are minor and do not, in our view, change the outcome of assessments.

1.4 Physical Processes

1.4.1 Comments on Response to NRW Deadline 3 Submission [REP4-047]

1.4.1.1 REP3-090.105

72. NRW (A) welcomes the Applicant's expectation that a condition will be imposed within the standalone NRW marine licence securing the commitment to limit changes in water depth to 5% caused by the presence of cable protection along the export cable corridor up to and including the exit pits just seaward of MLWS. NRW (A) further welcome that where that restriction is anticipated to be exceeded, the Applicant will consult with NRW (A) in respect of agreeing an alternative position. This discussion will involve consideration of whether further physical processes assessment in the shallow nearshore area would be required, and if so on what terms that assessment would be undertaken. NRW (A) request that this commitment is secured in the stand-alone Marine Licence.

1.4.1.2 REP3-090.107

73. NRW (A) welcomes the Applicant's commitment to adopting trenchless techniques across the intertidal and welcomes the Applicant's commitment that account will also be given to the natural envelope of beach profile change over time from the analysis of historical beach profiles to inform the final detailed design of the drill duct profile to avoid the risk of cable exposure at the beach. This commitment is secured in the updated Landfall Construction Method Statement [REP4-017] section 1.10.3.2 submitted at Deadline 4.

1.4.1.3 REP3-090.111

74. NRW (A) welcomes the commitment of the Applicant to conduct post-construction hydrographic and side scan surveys, with the intention to consider the data collected in the context of sand wave recovery, particularly in relation to the Constable Bank. NRW (A) welcomes that the Applicant has no objections to sharing this information with the relevant statutory bodies as part of the post-consent offshore monitoring plan. NRW (A) welcome the Applicant's acknowledgement that this will build on the strategic evidence required to understand the regional impacts to sediment transport processes and physical processes caused by the installation of large-scale wind farm developments into the future. The surveys already committed to by the Applicant will highlight any morphological changes to the seabed, improving the evidence base for future mitigation in accordance with National Policy and the best practice guidance and principles outlined in section 1.3 of the Offshore in-principle monitoring plan [APP-201].

1.4.2 Comments on the Outline Landfall Construction Method Statement [REP-017]

75. NRW (A) welcome the Applicant's commitment, as detailed in section 1.10.3.2, that account will also be given to the natural envelope of beach profile change over time from historical beach profiles to inform the final detailed design of the

drill duct profile to avoid the risk of cable exposure at the beach. We consider this matter to be closed.

1.4.3 Comments on the Mitigation and Monitoring Schedule [REP4-013]

76. **Reference Number 8:** NRW (A) request that the mitigation is amended to ensure that where the 5% restriction in water depth is exceeded, the Applicant will consult with NRW (A), in writing, in agreeing an alternative position. As noted by the Applicant in REP4-047 at REP3-090.103-105 *"…this discussion will involve consideration of whether further physical processes assessment in the shallow nearshore area would be required, and if so on what terms that assessment would be undertaken"*. NRW (A) request that this commitment is clearly worded and secured in the stand-alone Marine Licence and secured in the Mitigation and Monitoring Schedule [REP4-013] and Marine Licence Principle document [REP4-011] and this needs to be agreed in writing with NRW.

1.5 Benthic Subtidal and Intertidal Ecology

77. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Benthic Subtidal and Intertidal Ecology at this time.

1.6 Marine Water and Sediment Quality (MW&SQ)

78. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Marine Water and Sediment Quality.

1.7 WFD: Coastal and Transitional Water Bodies – Offshore works

79. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to WFD.

2 ONSHORE

2.1 Designated Landscapes

2.1.1 Landscape Sensitivity Assessment Guidance for Wales [REP4-085]

80. The Applicant's submission refers to guidance[4] on how to prepare a landscape sensitivity assessment to inform spatial planning and land management change.

81. **Landscape sensitivity** is a judgement which combines separate judgements on the **value** of the landscape and the **susceptibility** of the landscape to the proposed change. Value is 'inherent' whilst susceptibility is specific to the development and the landscape in which it is located. The sensitivity of a highly

[4] Landscape Sensitivity Assessment Guidance for Wales, NRW, Guidance Note 017.

valued landscape such as a National Park or Landscape may therefore be influenced by the susceptibility judgement. However, this does not mean the value of that landscape, which should reflect its national importance, is diminished in any way.

82. The issue we raised at issue specific hearing (ISH) 3 concerned the Applicant's underestimation of **landscape value,** and the influence this has had on other conclusions within their seascape, landscape and visual impact assessment (SLVIA). For example, the Applicant considers that special qualities of the Isle of Anglesey National Landscape (IoA NL) are of diminished value, being only high rather than very high value[5]. The guidance referred to by the Applicant does not support the approach they have taken and ultimately this has affected other judgements relating to the sensitivity and overall effects on this nationally designated landscape.

83. The latest Guidance prepared by the Landscape Institute titled *Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3)* (TGN 2024/01)[6] published in August this year, provides a clear direction on this matter. It states '*Landscape value within nationally designated landscapes should be* ***at the highest level*** *(e.g. expressed as high/very high/ of national value)*' (Our emphasis) (Page 12). For the avoidance of doubt, the reason the guidance refers to 'high/very high/national value', is not because there is a difference between these ratings for the purpose of the guidance, it is because the 'highest level' used to describe landscape value within a SLVIA may differ i.e. it may be 'high' in one assessment and 'very high' in another. In the case of the SLVIA for Mona, the highest level is 'very high' but, contrary to the aforementioned guidance, this judgement has not been used to describe e.g. special qualities of the IoA NL, which instead are assessed as high value.

84. Whilst the difference between high and very high may not appear to be significant, undervaluing the importance of the NL in this way, together with underestimating the magnitude of change, has resulted in an assessment which underestimates the significance of the harm to the NL. For the avoidance of doubt, the same approach was applied to undervaluing the special qualities of the Eryri National Park[7].

2.1.2 Appendix to HAP ISH3_20: Updated Visualisations Part 1 & Part 2 [REP4-038 & REP4-039]

85. The Applicant has provided updated visualisations for SLVIA Viewpoints 1, 2, 3, 4, 26 and 55 based on updated photography. We welcome the provision of the new visualisations. As highlighted in our previous comments, the clarity of the previous images suffered from being taken in sub-optimal weather / visibility

[5] These being the levels used in the SLVIA. For further details refer to paragraphs 412 and 425 of our Written Representations [**REP1-056**] and paragraphs 11 to 15 of our post ISH3 submission [**REP4-107**].

[6] Available online: LITGN-2024-01-GLVIA3-NC_Aug-2024.pdf

[7] For further information refer to paragraph 425 of our Written Representations [**REP1-056**]

conditions[8]. The updated baseline photography addresses this issue at these viewpoints. The horizon is now clearly visible, as are the turbines. The new images should be viewed alongside our previous advice to the Examination regarding the impacts upon nationally designated landscapes in North Wales.

2.1.3 Zone of Theoretical Visibility and representative viewpoint locations at 1:50,000 Scale [REP4-046]

86. We welcome the submission of the Zone of Theoretical Visibility (ZTV) analysis which has been re-presented at a larger scale (1: 50,000). As highlighted in our previous comments[9], the previous ZTV figures were illegible due to the small scale at which they were presented within the SLVIA document (1: 1,000,000)[10].

87. The results of the ZTV are now legible. The updated ZTV supports our previous advice to the ExA that the turbines would be visible along the entire northern coastline of the Isle of Anglesey. Furthermore, that visibility would, subject to any localised screening by vegetation/buildings, be theoretically possible from the majority of the National Landscape along the northern part of the island. As anticipated, the impacts would not be limited only to the viewpoint locations presented within the SLVIA, but would be experienced at locations all along the coast, including the coast path, beaches, public rights of ways inland from the coast, roads, and settlements.

88. We recommend the updated ZTV figures are viewed alongside our previous advice to the Examination regarding the impacts upon nationally designated landscapes in North Wales.

2.2 WFD Compliance Assessment: Onshore Works

2.2.1 Geomorphology Clarification Note (F01) [REP4-040]

89. The submitted Geomorphology Clarification Note outlines the conditions of each crossing as previously requested and therefore we are satisfied in this regard.

90. We note the report does not specify the principles of design of the permanent or temporary haul road crossings e.g. whether these be culverts, box culverts, clear spans etc. We do, however, acknowledge that The Outline Onshore Construction Statement (REP4-020) has been updated to include the commitment that the design of the watercourse crossings at each location will follow the approach set out in the National Culverts Study (NRW, 2022). The Onshore Construction Statement forms part of the Code of Construction Practice which is secured in the DCO. As previously noted any permanent culverts proposed (if permitted via the flow chart in the National Culverts Study)

[8] Raised in paragraph 267 of our Written Representations [**REP1-056**] and Page 22 of NRW Response to ExAQ1 [**REP3-093**].

[9] Raised in paragraph 267 of our Written Representations [**REP1-056**]

[10] Refer to SLVIA Figure A.4: Zone of Theoretical Visibility and representative viewpoint locations within the Mona 50 km SLVIA study area

should be oversized (hydraulically and at least x1.3 natural physical channel width), laid at the natural gradient of the watercourse, and buried within channel substrate to provide a continuous natural bed. Temporary culverts should also apply these points if due to be in the channel for >8 weeks or outside of the summer months.

2.3 Air Quality

91. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Air Quality.

2.4 Ecology (Terrestrial)

92. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Ecology.

2.5 Water Quality (Surface and Groundwater)

93. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Water Quality.

2.6 Flood Risk

94. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Flood Risk.

2.7 Materials and Waste

95. Following review of all documentation submitted at Deadline 4, NRW (A) have no further comments to provide with regard to Materials and Waste.

3 MARINE LICENSING

96. NRW MLT have reviewed the Applicant's Deadline 4 submission which included an updated Draft Development Consent Order (REP4-005). We welcome a number of amendments that have been made to address comments made in REP3-090 surrounding the drafting of the DCO and deemed Marine Licence. However, NRW MLT provide the following comments on matters we consider remain outstanding.

3.1 Part 1 of DCO Interpretation

97. NRW MLT as detailed in REP3-090 maintain that the correct reference should be Mean High Water Springs (MHWS) not Mean High Water (MHW). This is consistent with other recent Development Consent Orders including Awel y Mor, and Hornsea 4. This also accords with relevant primary and secondary legislation. See: section 42 of Marine and Coastal Access Act 2009 ['the MACAA 2009'].

3.2 Transfer Provision of the deemed Marine Licence (Article 7 of the DCO and also Schedule 14 paragraph 7)

98. NRW MLT maintain our concerns set out in REP1-056 and REP4-108 surrounding the inclusion of provisions relating to the transfer of the deemed Marine Licence. In our view the established and correct approach would be for the transfer of the deemed Marine Licence to be considered under section 72 of the MACAA 2009 by the Licensing Authority.

3.3 Schedule 14 para 12, Para 18 (4) Para 19 (2), Para 20 (3) and Para 21 (3) – Time Limits for Approval of Plans

99. NRW MLT maintain our concerns set out in REP1-056 and REP4-108 surrounding the inclusion of such provisions.

3.4 Schedule 14, para 17 (2) Dropped Objects

100. NRW MLT maintain as set out in REP3-90 additional wording is required at the end of para 17(2) to provide that all dropped objects must be recovered unless otherwise approved by the licensing authority. As currently drafted it is unclear whether any further action would be required following notification and any survey requirements.

4 REFERENCES

Furness, R.W. (2015) Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS). Natural England Commissioned Reports, Number 164.

Good Practice Guide for Underwater Noise Measurement, National Measurement Office, Marine Scotland, The Crown Estate, Robinson, S.P., Lepper, P. A. and Hazelwood, R.A., NPL Good Practice Guide No. 133, ISSN: 1368-6550, 2014

Harwood J, Chudzinska M, Booth, CG. 2021. Final Report: Further Development Of Marine Mammal Dynamic Energy Budgets Models For Application To Environmental Assessments And Integration Into The IPCoD Framework. SMRUC-MSC-2021-015 Provided to Marine Scotland, May 2022 (unpublished).

Hastie G, Merchant ND, Götz T, Russell DJ, Thompson PM, Janik VM. 2019. Effects of impulsive noise on marine mammals: investigating range-dependent risk. Ecological Applications 29:e01906

Kastelein RA, Schop J, Gransier R, Steen N, Jennings N. 2014a. Effect of Series of 1 to 2 kHz and 6 to 7 kHz Up-Sweeps and Down-Sweeps on the Behavior of a Harbor Porpoise (*Phocoena phocoena*). Aquatic Mammals 40, 232-242

King S, Schick RS, Donovan C, Booth CG, Burgman M, Thomas L, Harwood J. 2015. An interim framework for assessing the population consequences of disturbance. Methods in Ecology and Evolution 2015, 6, 1150–115.

Martin SB, Lucke K, Barclay DR. 2020. Techniques for distinguishing between impulsive and non-impulsive sound in the context of regulating sound exposure for marine mammals. The Journal of the Acoustical Society of America 147, 2159-2176.

NRW. 2023. PS016 NRW's Position on Assessing the effects of Hearing Injury from Underwater Noise on Marine Mammals.

Offshore Renewables Joint Industry Programme (ORJIP) for Offshore Wind. 2024. Range Dependent Nature of Impulsive Noise (RaDIN) Final Report

Ozsanlav-Harris, L., Inger, R. & Sherley, R. (2023) Review of data used to calculate avoidance rates for collision risk modelling of seabirds. JNCC Report 732, JNCC, Peterborough, ISSN 0963-8091.

Southall BL, Nowacek DP, Bowles AE, Senigaglia V, Bejder L, Tyack PL. (2021). Marine Mammal Noise Exposure Criteria: Assessing the Severity of Marine Mammal Behavioral Responses to Human Noise. Aquatic Mammals 2021, 47(5), 421-464

Von Benda-Beckman AM, Ketten DR, de Jong CAF, Lam FPA, Kastelein RA. 2020. TTS growth and recovery in harbor porpoises exposed to intermittent and continuous signals. TNO Report R11513. 78 pp.

Von Benda-Beckman AM, Ketten DR, de Jong CAF, Lam FPA, Kastelein RA. 2022. Evaluation of kurtosis-corrected sound exposure level as a metric for predicting onset

of hearing threshold shifts in harbor porpoises (*Phocoena phocoena*), J. Acoust. Soc. Am. 152, 29.