Ein cyf/Our Ref: AOS-24212-0002
Eich cyf/Your ref: EN010121
Our Unique Ref: 20049491

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Dyddiad/Date: 22/01/2025

Er sylw / For the attention of: Robert Jackson

Annwyl / Dear Robert,

PROPOSED MORECAMBE OFFSHORE WINDFARM GENERATION ASSETSCYFEIRNOD YR AROLYGIAETH GYNLLUNIO / PLANNING INSPECTORATE REFERECE: EN01012

EIN CYFEIRNOD / OUR REFERENCE: 20049491

RE: NATURAL RESOURCES WALES' DEADLINE 3 SUBMISSIONS

Thank you for your Rule 8 letter, dated 30th October 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 Deadline 2 on 12th December 2024.

The documents that we have reviewed for Deadline 5 include:

- [REP2-027] Applicant's Comments on Written Representations
- [REP1-080] Offshore Ornithology Technical Note 1_EIA

- [REP1-081] Offshore Ornithology Technical Note 2_HRA
- [REP1-082] Offshore Ornithology Technical Note 3_RTD at Liverpool Bay SPA Update Assessment
- [REP2-026] Outline Underwater Sound Management Strategy (UWSMS)
- [REP2-026] Outline Underwater Sound Management Strategy (UWSMS)

We have provided advice specifically on marine ornithology and marine mammals with regards to in combination and cumulative effects considering the Applicant's Deadline 1 and 2 submissions. Where we have not provided explicit advice, it can be taken that we have no further comments to make at this stage and that the ExA should refer to our previous submissions on those matters.

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 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.

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 Rebekah Newstead [redacted]@cyfoethnaturiolcymru.gov.uk and Bridget Randall-Smith [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]

Contents

1 Marine Ornithology

General Comments

1. The majority of the Deadline 1 submissions are focused on issues raised by Natural England in their Relevant Representations. As NRW was unable to submit a detailed Relevant Representation due to capacity constraints, meaning our first set of advice on the submission was not submitted until our Written Representations at Deadline 1 [REP1-099], the Applicant's Deadline 1 submissions do not account for the comments/issues raised by NRW in our Written Representations [REP1-099].

2. NRW (A) note that the updated 'REP1-013: 4 'Report to Inform Appropriate Assessment_Rev02' [REP1-013] and updated 'Chapter 12 Offshore Ornithology Rev 02' [REP1-033] only have minor updates that do not address any of the issues raised by NRW (A) regarding offshore ornithology in our Written Representations [REP1-099]. Therefore, we have not provided any comments on these.

3. Additionally, the 'Update on Without Prejudice Compensatory Measures' [REP1-093] relates to compensation measures for English lesser black-backed gull SPAs (Morecambe Bay & Duddon Estuaries SPA and Ribble & Alt Estuaries SPA). These English sites are not within NRW's remit and therefore we have not provided any comments on this.

Offshore Ornithology Technical Note 1_EIA [REP1-080]

4. NRW (A) specific comments on this relate to the updates to the Cumulative Effects Assessment (CEA) presented in Section 3 of REP1-080, as this will then feed into any in-combination assessments for Welsh SPAs/Ramsar's.

5. NRW (A) note that updates to fill the gaps in the CEA have been undertaken in REP1-080 for guillemot, herring gull, lesser black-backed gull, great black-backed gull, little gull and Manx shearwater. No gap filling has been undertaken for kittiwake, gannet, razorbill and puffin. This could potentially have implications for Welsh SPA features, particularly as we note that razorbill at Skomer, Skokholm and seas off Pembrokeshire SPA was taken through to in-combination assessment by the Applicant in their submission Report to Inform Appropriate Assessment (RIAA) [APP-027, updated in REP1-012] and hence gaps will likely need to be filled before we can reach agreement on integrity conclusions. We also note that as yet, the issues identified by NRW (A) with the EIA scale project alone mean seasonal peak abundances for Manx shearwater and gannet used in the apportionment to the designated sites (as per our advice provided in Section 3.1.1 of our Written Representations, REP1-099) have not been resolved by the Applicant and taken through to updated project alone HRA assessments. Once this has been done, there will be a subsequent need for the Applicant to revisit their apportioned impacts from the project alone for Welsh SPAs with these features and for a need to revisit in-combination assessments and include gap-filled projects. There may also be a need to gap fill at CEA for gannet.

6. The Applicant has utilised the gap fill numbers for historic projects from the Mona Deadline 3 and Morgan Deadline 1 submissions. During the Mona and Morgan examination we were of the view that the approach taken by the Mona/Morgan Applicants broadly provided the information requested by SNCBs and considered that the approach of using Marine Ecosystems Research Programme (MERP) data (Waggitt 2019) rather than a proxy approach represents a more repeatable and defensible approach. As the Morecambe Applicant has utilised the numbers from the Mona/Morgan approach, we conclude the same here. However, we do note that the Mona CEA submissions have been subject to some updates since their Deadline 3 submission (at Deadlines 4, 5 and 7) and the most comprehensive and easily accessible CEA tables (including gap filled projects) produced by the Mona Applicant can now be found in the updated offshore ornithology ES Chapter submitted by the Applicant at Deadline 7. Based on the cumulative effects totals presented by the Morecambe Applicant in REP1-080, we note that the collision and displacement totals presented are all lower than the totals presented by the Mona Applicant in their cumulative effects assessments within their updated Offshore Ornithology ES Chapter submitted at Deadline 7 of the project examination. We note that these differences are likely largely due to the Mona Applicant including numbers for the Llyr 1 project and gap filled figures for the Barrow and North Hoyle offshore wind projects following submissions from Ørsted interested parties during the Mona project examination. Given that there are issues/lack of clarity regarding consented lifespans of early offshore wind projects (such as North Hoyle), we would recommend that these projects are included within the cumulative and in-combination assessments and are gap filled where required. As per our advice to the Mona and Morgan Generation Applicants, we would also recommend that the Llyr 1 project is included within the cumulative assessments.

7. NRW (A) also note that the updated cumulative assessments that include the gap-filled historic projects have not been included in the cumulative assessments of the updated ES Chapter submitted at Deadline 1 [REP1-033]. We would recommend that an updated version of the ES Chapter that contains the full cumulative assessments including gap filled historic projects is submitted into the examination so that all the numbers feeding into the cumulative assessments are contained within one place that is readily and easily accessible for future projects to utilise this information.

Offshore Ornithology Technical Note 2_HRA [REP1-081]

8. On review of REP1-081, this documents specifically covers updated in-combination assessments to include gap-filled projects specifically for English SPAs for lesser black-backed gulls only (namely Morecambe Bay & Duddon Estuaries SPA and Ribble & Alt Estuaries SPA), along with an update on Liverpool Bay SPA little gull in-combination collision assessment.

9. NRW (A) note that the following Welsh SPA sites/features were taken through to in-combination assessment for the operations and maintenance phase by the Applicant in their submission Report to Inform Appropriate Assessment (RIAA) [APP-027, updated in REP1-012]:

- Aberdaron Coast SPA: Manx shearwater (displacement)

10. Skomer, Skokholm and seas off Pembrokeshire (SSSP) SPA: Manx shearwater (displacement), lesser black-backed gull (collision), assemblage named components guillemot and razorbill (both for displacement).

11. These Welsh feature/site combinations were taken through to in-combination assessment in APP-027/REP1-012 because the predicted impacts from the project alone for these exceeds the Applicant's threshold of 0.1% baseline mortality at any point across the advised range of rates. Therefore, we advise that the gap fill work undertaken for EIA scale cumulative should also be included and impacts apportioned and included in updated in-combination assessments for these sites and features.

12. NRW (A) draw attention to the recent Mona Offshore Windfarm examination, we have recently been able to conclude that an AEoSI can be ruled out for all in-combination impacts for all marine ornithology features of Welsh SPAs. Given that the Morecambe Generation Assets project is in examination at the same time as the Mona project and that both projects are located in the north Irish Sea/Liverpool Bay area, we would expect the same projects to be included within the in-combination assessments and that the in-combination totals for both projects would be the same/very similar. Therefore, we consider it likely that we will be able to reach the same conclusions regarding in-combination at Morecambe, but cannot be definitive until we see assessments presented by the Applicant.

13. NRW (A) also note that the apportioned impacts from the project alone for Welsh SPAs with Manx shearwater and gannet as qualifying features should be revisited once the Applicant has checked and updated where necessary the EIA scale mean seasonal peak abundances used in the apportionment to the designated sites (as per our advice provided in Section 3.1.1 of our Written Representations, REP1-099). We understand from the Applicant's responses to our Written Representations [REP2-027] that they intend to submit information to address these issues into the examination at Deadline 3. These updated predicted impacts for these sites and features should then be used to inform in-combination assessments for these sites and features and if they are required, then the gap-filled projects should also be included within these updated in-combination assessments.

14. With regard to little gull at Liverpool Bay SPA, as noted in our Written Representations [REP1-099], given that the Morecambe Generation Assets project is located wholly in English waters, NRW (A) defer comment/advice regarding predicted impacts and integrity judgements of the project alone and in-combination for all qualifying features of the Liverpool Bay SPA to NE, this includes the little gull feature.

Offshore Ornithology Technical Note 3_RTD at Liverpool Bay SPA Update Assessment [REP1-082]

15. As NRW (A) noted in our Written Representations [REP1-099], given that the Morecambe Generation Assets project is located wholly in English waters, we defer comment/advice regarding predicted impacts and integrity judgements of the project alone and in-combination for all qualifying features of the Liverpool Bay SPA to NE, this includes the red-throated diver (RTD) feature.

16. However, we do note that in Section 2.5.2, paragraph 45 of Offshore Ornithology Technical Note 3 (Red-Throated Diver at Liverpool Bay SPA Update Assessment) [REP1-082] the Applicant states: *"It is acknowledged by the Applicant that the small relative contribution of the Project is not strictly relevant when considering the total in-combination effect. However, it is the case that there must be a threshold of effect that is considered by NE to generate an AEoI, and below which AEoI can be ruled out.* ***In this case, therefore, it appears that NRW (and by proxy NE) considered that the effect up to and including Awel y Môr OWF was below such a threshold…."***.

17. The assertion highlighted in bold above is a misinterpretation of the advice provided by NRW during the AYM examination. In paragraph 2.6.14 of our Written Representations at Awel y Môr (NRW 2022), we stated that: *'From the evidence provided, it does appear that the extent of the supporting habitat for red-throated diver (RTD) within Liverpool Bay SPA will be maintained if the project is constructed, and therefore there will be no adverse effect on the RTD feature of Liverpool Bay SPA from habitat loss.'*

18. Therefore, as there was considered to be no effect on RTD habitat loss from Awel y Môr project alone there would be no additional habitat loss to add from the project to an in-combination total

Offshore Ornithology Comments on Morecambe Applicant Deadline 2 Submissions

Responses to Applicant's Comments on Written Representations [REP2-027]

19. **WR-099-07***:* NRW (A) acknowledge that the Applicant has updated the EIA scale gannet assessments to correct these errors in their Response to the Rule 9 Letter [PD1-010]. As was noted in our Written Representations (see Section 3.1.1 of REP1-099), we welcome this, but we also recommend that these corrected EIA scale abundances should a be taken through to the HRA assessments for the relevant gannet designated sites (including Grassholm SPA) and the assessments updated accordingly. We understand the Applicant intends to submit updates at Deadline 3 to address this issue. Therefore, we will provide further updates/advice following full review of the Applicant's submission at Deadline 3.

20. **WR-099-08:** Please see responses to points WR-099-17 below.

21. **WR-099-09:** Whilst the Applicant has presented information to address the gap-filling of historic projects for EIA scale cumulative assessments, NRW (A) note that no inclusion of these gap filled projects into apportioned in-combination

assessments have been provided for the Welsh SPA sites and features taken through to the in-combination assessments in the Report to Inform Appropriate Assessment, RIAA [REP1-012]. While gaps in these assessments persist we continue to be unable to provide advice on in-combination impacts for Welsh SPAs at this stage. The only SPAs where the gap filled figures for historic projects have been apportioned to designated sites and included in the in-combination assessments in REP1-081 are lesser black-backed gull for Morecambe Bay and Duddon Estuaries SPA and Ribble and Alt Estuaries SPA, which are both English sites and not within NRW's remit. Please see our response to Offshore Ornithology Technical Note 2_HRA REP1-081 for more details.

22. **WR-099-11***:* Please see responses to points WR-099-07 above and to WR-099-13 to WR-099-15 below.

23. **WR-099-12***:* Please see response to point WR-099-07 above.

24. **WR-099-13***:* NRW (A) welcome that the Applicant intends to include an updated assessment for Manx shearwater displacement in an update to the Offshore Ornithology Technical Note 1 (EIA) at Deadline 3. We will therefore provide further comment/advice on this matter following full review of the Applicant's Deadline 3 submission. Given that the Offshore Ornithology ES Chapter can generally be considered as the place that future projects will go to for extracting the information/predicted impacts for the Morecambe Generation Assets projects for inclusion in future cumulative and in-combination assessments, we would advise that any updates to the abundance estimates and associated assessments should be included within an updated ES Chapter, rather than the information being contained within various different documents. This would also apply to any updates to apportioned impacts to designated sites and associated impacts and assessments relating to the Report to Inform Appropriate Assessment (RIAA).

25. **WR-099-14:** NRW (A) welcome that the Applicant intends to include any required updates to gannet and Manx shearwater assessments to address these issues in updated versions of the Offshore Ornithology Technical Note 1 (EIA) and Offshore Ornithology Technical Note 2 (HRA), which will be submitted at Deadline 3. We will therefore provide further comment/advice on these issues and assessments following full review of the Applicant's Deadline 3 submission. Please also note our advice on point WR-099-13 above regarding including these updated information/assessments in updated versions of the ES Chapter and RIAA, rather than in separate technical notes.

26. **WR-099-15***:* Please see responses to points WR-099-07, WR-099-13 and WR-099-14 above.

27. **WR-099-16***:* The Applicant's clarification regarding the puffin seasonal definitions used is welcomed. Following this, as the predicted impacts from the project alone for puffin displacement for the Skomer, Skokholm and seas off Pembrokeshire SPA equate to well below 1% of baseline mortality of the colony (0.04% at worst case scenario of 70% displacement and 10% mortality, Table 8.82 of the RIAA, REP1-012), we can now agree with the Applicant's conclusion that an adverse effect on site integrity (AEoSI) can be ruled out for this feature for the project alone.

Additionally, we note that at the worst case scenario of 70% displacement and 10% mortality the predicted impact from the project alone equates to 0.04% of baseline mortality (see Table 8.82 of the RIAA, REP1-012), which is below the Applicant's threshold for taking through to in-combination assessment of the project alone exceeding 0.1% of baseline mortality. As we have agreed to the Applicant's approach regarding screening for inclusion of site/features in in-combination assessments in this instance, we are content that this feature is not taken through to in-combination assessment and that an AEoSI can be ruled out for this feature from in-combination displacement.

28. **WR-099-17***:* NRW (A) have advised a range of 1-10% mortality be considered for all relevant species, including gannet, for displacement assessments. We do however acknowledge the Applicant's position regarding gannet mortality rates. We agree that gannet has a large foraging range (mean-maximum of 516.7km for Grassholm SPA, Woodward et al. 2019) and has a high habitat flexibility (Furness & Wade 2012) suggesting that displaced birds would readily find alternative habitats including foraging areas. As a result, we agree that it is unlikely that gannet displacement mortality rates would be at the top of the range considered and may be more likely to be towards the lower end of the range. Therefore, we advise that, following any updates to apportioned Grassholm gannet abundances, the full displacement matrices are provided so that we can consider predicted impacts at any range of impacts or at any point within the range.

29. **WR-099-18:** No further comments.

30. **WR-099-19 to WR-099-21***:* NRW (A) welcome the additional information presented by the Applicant to address the gap filling of historical projects submitted at Deadline 1. Please see our separate comments on REP1-080 and REP1-081.

31. **WR-099-22:** Please see our comments on REP1-081.

32. **WR-099-23:** Please see our comments on the gap filling of historic projects and updated cumulative and in-combination assessments in REP1-080 and REP1-081.

33. **WR-099-24 to WR-099-25:** Please see our comments on REP1-080 and REP1-081.

34. **WR-099-26 to WR-099-29***:* No further comments.

35. **WR-099-30 to WR-099-31***:* NRW (A) welcome the response and will provide further advice/comment regarding potential impacts to Aberdaron Coast and Bardsey Island SPA and Skomer, Skokholm and seas off Pembrokeshire SPA Manx shearwater following detailed review of the information the Applicant intends to submit at Deadline 3. We also draw attention to our advice provided on point WR-099-13 above regarding the inclusion of any updated SPA feature assessments in an updated version of the RIAA, such that all information is included in one place and hence easily accessible by future projects rather than being spread across various documents.

36. **WR-099-32***:* Please see response to point WR-099-16 above.

37. **WR-099-33***:* NRW (A) welcome the response and will provide further advice/comment regarding potential impacts to Grassholm SPA gannet following detailed review of the information the Applicant intends to submit at Deadline 3. We also note our advice provided on point WR-099-13 above regarding the inclusion of any updated SPA feature assessments in an updated version of the RIAA, such that all information is included in one place and hence easily accessible by future projects rather than being spread across various documents. Please also see our response to point WR-099-17 above regarding gannet % displacement rates.

38. **WR-099-34:** No further comment.

39. **WR-099-35***:* Noted. Please also see our comments on REP1-082 regarding NRW advice regarding Liverpool Bay SPA and red-throated diver habitat loss during the Awel y Mor examination.

40. **WR-099-36 to WR-099-41:** NRW (A) welcome the response and will provide further advice/comment regarding impacts to the Great Orme's Head SSSI following detailed review of the information the Applicant intends to submit at Deadline 3. Please also note our advice provided on point WR-099-13 above regarding the inclusion of any updated assessments relating to EIA (for which SSSI assessments are relevant) being included in an updated version of the Offshore Ornithology ES Chapter, such that all information is included in one place and hence easily accessible by future projects rather than being spread across various documents.

2 Marine Mammals

Outline Underwater Sound Management Strategy (UWSMS) REP2-026

41. **WR-099-48:** NRW (A) welcomes, in principle, the commitment to develop an Underwater Sound Management Strategy (UWSMS), and that it will identify all potential noise sources associated with the project with further detail provided in associated mitigation plans. Whilst NRW (A) acknowledge that further significant detail cannot be populated at this time, we agree that the UWSMS should reduce the magnitude of impacts to an acceptable level. NRW (A) agree that the UWSMS should be conditioned through both the deemed Marine Licence (dML) and standalone Marine Licence (ML). NRW (A) welcomes the opportunity to engage with the Applicant on developing the UWSMS during the examination and post-consent.

42. **WR-099-51**: With reference to the applicant's response to WR-099-51, NRW (A) acknowledge and welcome the Applicant's commitment to use all appropriate tools and up-to-date information when evaluating the potential effects of the Project post-consent, considering the final project design and the mitigation requirements for the development of the final UWSMS, the final MMMP for piling and European Protected Species (EPS) Licence requirements. NRW (A) advise that the mitigation method recommended via the Offshore Renewables Joint Industry Programme's

(ORJIP) Range dependent nature of impulsive noise (RaDIN) project is included as a mitigation option within the final UWSMS and MMMP.

Outline Vessel Traffic Management Plan (VTMP) REP2-022

43. Section 7.1 Marine Mammal and Basking Shark Measures: NRW (A) acknowledge and welcome the changes made to the chapter in the VTMP [APP-153]. We seek confirmation that these measures essentially match those in the WiSe scheme

Draft Marine Mammal Mitigation Protocol (MMMP) REP2-017

44. With reference to Section 2.2 Mitigation, Pars 37 and 38: NRW is currently a signatory to the 2022 Joint Interim Position Statement on Unexploded Ordinance (UXO) Clearance and can confirm that at present, the hierarchical approach taken by the applicant for UXO clearance is sufficient. NRW (A) 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.

45. Please be advised that an updated Position Statement (which NRW have contributed to) is currently in development 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.

46. Sections 2.2.3 and 3.1.2 Acoustic Deterrent Devices (ADD): NRW (A) advise inclusion of a statement that the Applicant understands and commits to the need for proportionate and judicial application of ADDs, to avoid excessive ADD exposure (particularly cumulatively over multiple piling events), and that this will be considered carefully when finalising the ADD deployment duration post consent.

Responses to Applicant's Comments on Written Representations [REP2-027]

47. **WR-099-48**: NRW (A) welcomes the applicant's response. Please refer to paragraph 37, NRW response to WR-099-48 for comment.

~~48.~~ **WR-099-51**: NRW (A) welcomes the applicant's response. Please refer to paragraph 38, NRW response to WR-099-51 for comment.

49. **WR-099-52**: NRW (A) acknowledge and welcome the updates to the VTMP [APP-153].

50. **WR-099-54**: NRW (A) acknowledge and welcome the intent to update Chapter 11 Marine Mammals and Report to Inform Appropriate Assessment (RIAA) accordingly. NRW (A) would not expect the adjustment in the methodology to significantly alter the conclusions.

51. **WR-099-55**: – NRW (A) fully agree that the Interim Population Consequences of Disturbance (iPCoD) model is an appropriate tool to assess the potential impacts of disturbance, however we clarify that our preference is to interpret the results from iPCoD modelling within the context of other approaches. NRW (A) agree with the applicant that, although a number of thresholds for estimating numbers

disturbed and guidance texts for these currently exist, no such guidance or methodology (other than iPCoD) has been widely agreed upon with regard to how to use the estimated number of animals disturbed when assessing a population level effect. This does not mean such methods (including expert judgement) do not exist.

52. NRW (A) are currently in the process of producing such a position statement (which will also function as guidance) on assessing population level effects of disturbance and displacement within a Special Area of Conservation (SAC) and at Marine Mammal Management Unit (MMMU) level. While this is still a work in progress, in addition to IPCoD other methods might include (but and are not limited to): population viability analysis (PVA); percentage of the MMMU population disturbed either over a single event or multiple events; or percentage of the SAC population (mainly relevant to Bottlenose dolphin).

53. **WR-099-56**: NRW (A) agrees with the applicant that the application of a harbour porpoise D/R curve to bottlenose dolphin is expected to lead to highly precautionary results. Therefore, NRW (A) fully agree with the assessment conclusions given that these were ultimately informed by numbers obtained using the D/R approach.

54. NRW (A) has previously advised (for other projects) that the literature indicates that bottlenose dolphin and minke whale are more tolerant to noise than harbour porpoise. NRW (A) have also published similar advice in an evidence report that reviewed and provided recommendations on assessment of noise disturbance for marine mammals [Sinclair *et al.*, 2023]. Anecdotal and qualitative observations also suggest that these species behave very differently from harbour porpoise. Therefore, applying a D/R curve from a more sensitive species to a less sensitive species is likely to result in overestimates of disturbance, which, while not ideal (strictly in terms of capturing numbers accurately), would be considered a precautionary approach. Having said that for minke whale, one needs to consider that the sound energy of pile driving is highest in the low frequency range, and overlaps more with the hearing range of a minke whale than that of a harbour porpoise - pile strikes of the same unweighted single-strike Sound Exposure Level (SEL) are therefore louder for a minke whale than a harbour porpoise. However, for minke whale, the limited evidence available from studies with sonar seems to indicate that they are less sensitive by about 40-50 dB [Kvadsheim *et al.,* 2017; Sivle *et al.,* 2015; Tougaard 2021].

55. For future assessments, this does not preclude the fact that NRW (A) do not advise the use of Temporary Threshold Shift (TTS) thresholds as thresholds to assess disturbance for comparison purposes - as used here. We would generally recommend the use of other existing thresholds that have previously also been used in assessments such as but not limited to the 160 dB SPL_{rms} level B harassment threshold [NFMS, 2005], notwithstanding this threshold has its own limitations that users should be aware of [Sinclair *et al.,* 2023].

56. **WR-099-57-58**: NRW (A) agrees with the applicant that assuming a fleeing speed of 1.5 m/s (which may be slower than speeds recorded in the field) may lead of precautionary estimates of ADD deployment length. However, deployment length

is not the only concern; source level and range of effect are also crucial to consider. The concern is that to mitigate for and prevent PTS incidents, there is a risk that ADDs may be used at too powerful a setting to ensure that the area is cleared – potentially effectively shifting the impact pathway to disturbance via strong behavioural and physiological responses at ranges of several kilometres.

57. NRW (A) therefore welcome the applicant's statement that the duration and potential effect of the use of the ADD will be further considered post-consent in the final UWSMS, MMMP and EPS licence with consultation based on the most up to date available information.

58. **WR-099-59**: NRW (A) note the applicant's response, however, our question has not been addressed. We can confirm that we did not query the level of precaution used and requested a methodological clarification regarding the assumptions made in the calculation. Could the applicant therefore clarify whether the method used assumed that: (1) disturbed animals will leave the area; and/or (2) no new animals will be disturbed (or repeatedly disturbed) other than those within the 285.4 km^2 area?

59. NRW (A) fully agree with the applicant that observations made by Benhemma-Le Gall *et al.,* [2021] showed that the presence of harbour porpoise decreased by 35.2% at 2km from construction vessels, and to 24% at 3 km. NRW (A) have previously also recommended the use of a dose response curve based on this data in our advice to reduce over conservatism in assessments particularly when calculating the impacts of vessels under way across the length of their trip, most recently for the for Mona and Morgan offshore wind farm examinations.

60. **WR-099-61**: NRW (A) welcomes the intention to submit an updated marine mammal technical note at Deadline 3 that will comment on the effects from all sources across the Project lifetime from a cumulative perspective

61. **WR-099-62 - WR-099-64**: NRW (A) appreciate the clarifications and consider this issue closed.

62. **WR-099-65 - WR-099-66**: NRW (A) welcomes the intention to submit an updated marine mammal technical note at Deadline 3 that will comment on the effects from all sources across the Project lifetime from a cumulative perspective

63. **WR-099-67**: NRW (A) note that the explanation offered by the applicant is still based on considering worst case scenarios occurring simultaneously for piling alone. The CEA should consider the sum of all impacts, otherwise the potential number of days of disturbance may be artificially limited to the piling days alone as opposed to all types of disturbance sources over the length of the construction period.

64. **WR-099-68**: NRW (A) agree with the applicant that the suggestion in King *et al.,* [2015] was conceptual in nature, suggesting that IPCoD could be used to model population effects from other sources given adequate parameterisation. This work is ongoing, given that the SATURN project has incorporated the ability to assess impacts from shipping into the DEPONS model for simulating population effects of noise for harbour porpoises [e.g. Schnitzler *et. al.,* 2024]. Similarly, work is being

done to further develop Dynamic Energy Budget (DEB) models for their eventual inclusion into the iPCoD framework [Harwood *et al.,* 2022].

65. The key point being made here is that the scientific community recognises that for noise events where the effect may be individually small (e.g. passage of one vessel), it is plausible that the cumulative impact of repeated but individually small disturbances may be greater than the impact from a single larger disturbance event. Thus, it may not be sufficient to argue that an impact is "reversible / recoverable" or "short lived / temporary", as in the process of recovering from the disturbance event the animal may have incurred some cost.

66. This appears to be underpinned by evidence, which shows that harbour porpoise respond to vessel noise by increasing swimming effort, making deeper dives, and ceasing echolocation and foraging for several minutes [Dyndo *et al.,* 2015; Wisniewska *et al.,* 2018] and potentially reducing their daily net energy gain [Rojano-Doñate *et al.,* 2023]. Wisniewska *et al.,* [2018] further noted that *"although these individuals lived in highly trafficked coastal waters, they did not seem to have habituated to vessel noise"*. Within acoustically degraded habitats, it is possible that animals need to make trade-offs between the benefits of remaining and taking advantage of important resources while tolerating disturbance, and the physiological and energetic costs of relocation [e.g. Hastie *et al.,* 2021; Findlay *et al.,* 2024].

67. **WR-099-69**: NRW (A) welcomes the intention to submit an updated marine mammal technical note at Deadline 3 that will comment on the effects from all sources across the Project lifetime from a cumulative perspective

68. **WR-099-70:** NRW (A) welcomes the intention to submit an updated marine mammal technical note at Deadline 3 that will comment on the effects from all sources across the Project lifetime from a cumulative perspective. NRW (A) also welcome the Measures to reduce the risk of collision have been presented in the Outline PEMP (APP-146) and included in the Outline VTMP updated at Deadline 2 and agree that the measures included would also help to reduce the potential level of disturbance from vessels.

69. **WR-099-71**: NRW (A) welcomes the intention to update Chapter 11 Marine Mammals and RIAA at Deadline 4.

70. **WR-099-72**: NRW (A) welcomes the intention to submit an updated marine mammal technical note at Deadline 3, and Updates to Appendix 11.4, CEA Project Screening (APP-068) at Deadline 4.

71. **WR-099-73 - WR-099-74**: NRW (A) welcomes the applicant's response and acknowledges that the Applicant commits to using all appropriate tools and up-to-date information when evaluating the potential effects of the Project post-consent. NRW (A) also note that potential mitigation options, including noise abatement systems (NAS), are listed within the Draft MMMP (APP-149) and outline UWSMS which would be finalised post-consent in line with the final design of the Project.

72. **WR-099-75 - WR-099-78**: NRW (A) welcomes the intention to submit an updated marine mammal technical note and Chapter at Deadlines 3 and 4.

73. **WR-099-79**: NRW (A) acknowledges the clarification provided by the applicant, directing towards Table 4.3 of Appendix 11.4 Marine Mammal CEA Project Screening (APP-068). We can consider the issue closed.

74. **WR-099-80 - WR-099-81**: Noted, no further comments.

75. **WR-099-82**: NRW (A) welcomes the intention to submit an updated marine mammal technical note at deadline 3.

76. **WR-099-83 - WR-099-86**: NRW (A) welcomes the intention to submit an update to Chapter 11 Marine Mammals and the RIAA, expected Deadline 4.

77. **WR-099-87 - WR-099-88**: NRW (A) welcomes the intention to submit updates in a marine mammal technical note at Deadline 3, and updates to Chapter 11 Marine Mammals and the RIAA, expected Deadline 4.

78. **WR-099-89 - WR-099-91:** NRW (A) welcomes the applicant's response and acknowledges that the Applicant will use all appropriate tools and up-to-date information when evaluating the potential effects of the Project post-consent. We also note that potential mitigation options, including NAS, are listed within the Draft MMMP (APP-149) and outline UWSMS which would be finalised post-consent in line with the final design of the Project.

79. **WR-099-92**: Please refer to our response for WR-099-52 and WR-099-70.

80. **WR-099-93 - WR-099-95**: Noted, NRW (A) consider the issue closed.

81. **WR-099-96:** NRW (A) acknowledge the applicant's response. NRW (A) agree with Natural England and defer to them for further comment.

82. **WR-099-97**: NRW (A) welcomes the intention to submit Updates to Chapter 11 Marine Mammals and the RIAA, expected Deadline 4.

83. **WR-099-98:** NRW (A) has previously advised that from a consenting perspective monitoring can be requested where either there is insufficient mitigation, or the applicant concludes no significant impact without sufficiently specifying or providing sufficient information on the expected mitigation measures. Such monitoring allows validation of the predictions made in the assessment, reducing any uncertainty inherent in the assessment conclusions because of uncertainties about the mitigation methods.

84. Given the additional commitments made by the Applicant, NRW (A) may be able to agree that no monitoring may be required from a consenting perspective, however any additional data collection carried out by the applicant would be welcome. Therefore, using the additional aerial surveys proposed during the winter season (potentially November to March) for Red Throated Diver to provide information on marine mammal presence and densities would be highly appreciated.

85. Finally, we do note that noise monitoring requirements are usually specified within the Marine Licence granted and typically for offshore wind farm projects across the

UK there is a requirement to measure the underwater noise from the installation of the first four piles for each foundation type, or a representative number of pile locations, or the four largest piles. NRW (A) would also adopt a standard approach to this monitoring requirement (ISO 18407:2017).

86. **WR-099-101**: NRW (A) welcomes the applicant's response and acknowledges that the Applicant will use all appropriate tools and up-to-date information when evaluating the potential effects of the Project post-consent. NRW (A) also note that potential mitigation options, including NAS, are listed within the Draft MMMP (APP-149) and outline UWSMS which would be finalised post-consent in line with the final design of the Project.

87. **WR-099-102 - WR-099-103**: NRW (A) acknowledge that the finalisation of procedures in the MMMP will be undertaken post-consent alongside developed Project design information and will follow the latest JNCC guidelines at the time as required. NRW (A) also welcome that potential mitigation options, including NAS, are listed now within the Draft MMMP (APP-149) and outline UWSMS which would be finalised post-consent in line with the final design of the Project.

88. **WR-099-104**: NRW (A) acknowledge and welcome the commitment of the applicant to an outline UWSMS which also includes a commitment to consider the use of NAS. NRW (A) also welcome the inclusion of condition 30 in the dML. NRW (A) welcomes the opportunity to engage with the Applicant on developing the UWSMS during the examination and post-consent.

89. **WR-099-105- WR-099-108:** NRW (A) agree with the Applicant that they have presented an appropriate Management Unit (MU) approach for this assessment. As discussed in the meeting held on 4th December 2024, the point raised here was simply to clarify NRW's advice with respect to the use of the OSPAR III MU to address a comment made by the applicant regarding potential dilution effects. NRW (A) confirm that no updates to the assessment are expected.

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