Partners in UK offshore wind

MONA OFFSHORE WIND PROJECT

Response to Natural Resource Wales D2 Submission

Deadline: 3

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F01

Image of an offshore wind farm

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Prepared by:

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Prepared for:

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Glossary

Term	Meaning
Applicant	Mona Offshore Wind Limited.
Appropriate Assessment	A step-wise procedure undertaken in accordance with Article 6(3) of the Habitats Directive, to determine the implications of a plan or project on a European site in view of the site's conservation objectives, where the plan or project is not directly connected with or necessary to the management of a European site but likely to have a significant effect thereon, either individually or in-combination with other plans or projects.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Environmental Statement	The document presenting the results of the Environmental Impact Assessment (EIA) process for the Mona Offshore Wind Project.
Evidence Plan Process	The Evidence Plan process is a mechanism to agree upfront what information the Applicant needs to supply to the Planning Inspectorate as part of the Development Consent Order (DCO) applications for the Mona Offshore Wind Project.
Expert Working Group (EWG)	Expert working groups set up with relevant stakeholders as part of the Evidence Plan process.
Inter-array cables	Cables which connect the wind turbines to each other and to the offshore substation platforms. Inter-array cables will carry the electrical current produced by the wind turbines to the offshore substation platforms.
Interconnector cables	Cables that may be required to interconnect the Offshore Substation Platforms in order to provide redundancy in the case of cable failure elsewhere.
Landfall	The area in which the offshore export cables make contact with land and the transitional area where the offshore cabling connects to the onshore cabling.
Mona Array Area	The area within which the wind turbines, foundations, inter-array cables, interconnector cables, offshore export cables and offshore substation platforms (OSPs) forming part of the Mona Offshore Wind Project will be located.
Mona Offshore Wind Project	The Mona Offshore Wind Project is comprised of both the generation assets, offshore and onshore transmission assets, and associated activities.
Mona Offshore Wind Project PEIR	The Mona Offshore Wind Project Preliminary Environmental Information Report (PEIR) that was submitted to The Planning Inspectorate (on behalf of the Secretary of State) and NRW for the Mona Offshore Wind Project.
Offshore Substation Platform (OSP)	The offshore substation platforms located within the Mona Array Area will transform the electricity generated by the wind turbines to a higher voltage allowing the power to be efficiently transmitted to shore.
Wind turbines	The wind turbine generators, including the tower, nacelle and rotor.
The Planning Inspectorate	The agency responsible for operating the planning process for NSIPs.

Acronyms

Acronym	Description
BDMPS	Biologically Defined Minimum Population Scales
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EnBW	Energie Baden-Württemberg AG
EWG	Expert Working Group
ExA	Examining Authority
ISAA	Information to support the Appropriate Assessment
JNCC	Joint Nature Conservation Committee
HRA	Habitats Regulations Assessment
MU	Management Unit
NRW (A)	Natural Resources Wales (Advisory)
NSIP	Nationally Significant Infrastructure Project
OSP	Offshore Substation Platform
PEIR	Preliminary Environmental Information Report
PVA	Population Viability analysis
RMS	Root mean square
SNCB	Statutory Nature Conservation Body
SoCG	Statement of Common Ground
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

Units

Unit	Description
µPa	Micropascal
dB	Decibel
km	Kilometres
km^2	Kilometres squared

1 Response to Natural Resource Wales D2 Submission

1.1 Introduction

1.1.1.1 The Applicant has responded to NRW's Deadline 2 submission below.

2 Responses to Natural Resource Wales D2 Submission

2.1 Natural Resources Wales Advisory

Table 2.1: REP2-099 - Natural Resources Wales Advisory (NRW (A))

Reference	Written Submission Comment	Applicant's response
REP2-099.1	1. Response to Errata Sheet **1.1 Marine Mammals** We note within the Errata Sheet (REP1-044), at page 5, paragraph 4.9.5.22, that the Applicant has changed text within APP-056 from "*Multiplying the area of ensonification by each species-specific density would lead to unrealistic estimates, as serious disturbance would not occur over ranges such as **23 km***." to "*Multiplying the area of ensonification by each species specific density would lead to unrealistic estimates, as serious disturbance would not occur over ranges such as **4.08 km***."	The Applicant welcomes the comment in REP2-099.4 that NRW (A) does not consider this matter to materially affect the overall assessment conclusions given the mitigation measures proposed. The Applicant also welcomes the further engagement with NRW (A) (via a meeting on 9 September 2024) on this matter and the written agreement (via email on 10 September 2024) that this methodological discussion does not materially impact NRW (A)'s agreement with the overall conclusions that there will be no significant effect / adverse effect on marine mammal populations due to the mitigation methods that will be employed. The Applicant will look to capture this discussion in the next update to the Statement of Common Ground (SoCG).
REP2-099.2	Further to this edit, NRW(A) notes that we can no longer fully agree with the rationale provided for the decision not to calculate number of animals disturbed from vessel noise. Here the Applicant states that estimates based on an impact range derived from the Applicant's noise modelling, and corroborated by evidence provided by the Applicant which indicates that disturbance has been observed at ranges of up to 7 km, would be unrealistic.	The Applicant considers that a strong justification for the assessment of disturbance from underwater sound from vessel use has been provided in Volume 2, Chapter 4: Marine mammals (APP-056) and that the assessment approach is robust. Further detailed justification is provided in the Applicant's Response to Relevant Representation from NRW (A) Impacts on Marine Mammals from Elevated Underwater Sound Due to Vessel Use (PDA-009).
REP2-099.3	We agree with the Applicant that a proportion of animals would be disturbed within the impact radius as this is a statement clearly borne by the evidence (e.g. Joy et al. 2019; Benhemma le Gall et al. 2021) and knowledge of the probabilistic nature of animal responses. We also agree that the background noise level in an area may occasionally exceed the threshold level of 120 dB SPLrms, which would reduce the overall impact radius. However, we do not agree that this supports the decision not to carry out an estimation of the numbers disturbed. We believe that a stronger argument could be made for either of two alternative approaches: (1) calculate numbers disturbed using the 4.08 km impact radius and present this as an absolute worst case scenario, (2) calculate the numbers using refinements obtained from the literature, (e.g -24% at	The Applicant notes NRW (A)'s comment regarding paragraph 4.9.5.22 in Volume 2, Chapter 4: Marine mammals (APP-056) "*Multiplying the area of ensonification by each species-specific density would lead to unrealistic estimates, as serious disturbance would not occur over ranges such as **4.08 km***." The Applicant highlights that the errata to paragraph 4.9.5.22 in Volume 2, Chapter 4: Marine mammals (APP-056) was a change in the maximum modelled disturbance value due to the 23 km referring to the outdated maximum modelled disturbance range from underwater sound from vessels at PEIR, rather than the correct maximum modelled distance at Application (4.08 km). The Applicant corrected this maximum disturbance range in the Errata Sheet (REP1-044). The Applicant stresses that there

Reference	Written Submission Comment	Applicant's response
	3 km Benhemma le Gall et al. 2021) assuming that a percentage / proportion of animals within the impact radius would be disturbed rather than 100%.	was no change in assessment approach, methodology or conclusions of significance, as the assessment presented the correct range of 4.08 km. Further, the Applicant clarifies that this statement was in relation to the assumption that within this range there would be 100% disturbance of animals. This takes a conservative approach as, in reality, it is more probable that there will be a proportional response (i.e. a dose response) which would mean that the further an animal is from the vessel, the lower the probability of a response. Given that the behavioural response threshold of 120 dB re 1 µPa (rms) is applied to capture all types of behaviour (from mild startle responses to fleeing behaviour) and is applied across all marine mammal species, it is unsurprising that there would be a proportional effect in response to vessel noise (i.e. you would not anticipate that all animals that experience this sound would respond by fleeing directly away). The Applicant questions the comment in REP2-099.2 that "NRW(A) notes that we can no longer fully agree with the rationale provided for the decision not to calculate number of animals disturbed from vessel noise" and in REP2-099.3 "the decision not to carry out an estimation of the numbers disturbed". The Applicant has in fact calculated the number of animals disturbed from underwater sound from vessels, using a range of disturbance from 1 km to 7 km derived from literature from moving vessels in the field (which encompasses the modelled maximum impact range of 4.08 km and is therefore highly precautionary). This information is presented in Table 4.44 of Volume 2, Chapter 4: Marine mammals (APP-056). As detailed in NRW (A)'s preliminary environmental impact report (PEIR) section 42 (S42) Response and REP1-056.119 in the Applicant's Response to Written Representations (REP2-078), NRW (A) acknowledged that it is unrealistic to assess injury and disturbance from vessel use by presenting a maximalist sum of the impact ranges of all vessels. Thus, whilst the elevation in the number of vessels above the baseline was quantified, the Applicant did not go further and sum the impact areas of all vessels, as, in agreement with NRW (A), this would be unrealistic and lead to a highly over-amplified assessment. Therefore, the Applicant emphasises that the rationale and methodology for the assessment of disturbance has not changed from what was presented in the Environmental Statement (which included additional detail with further quantification of vessel impacts as a result of Section 42 feedback on the PEIR). The Applicant notes NRW (A)'s comments on using a static radius, and the Applicant highlights empirical data used to derive impact ranges have been
REP2-099.4	While we would not expect this to have a material effect on the overall conclusions given the mitigation measures proposed, strong justification should be provided to clarify why approaches such as those discussed above were not taken.	

Reference	Written Submission Comment	Applicant's response
		based on moving receptors in the field (as per the Applicant's Response to Relevant Representation from NRW(A) - Impacts on Marine Mammals from Elevated Underwater Sound Due to Vessel Use (PDA-009)). The impact ranges were used with agreed densities and Management Unit (MU) populations to calculate the number of animals disturbed. The Applicant still considers that assessing the footprint of disturbance for a moving vessel as a continuous area from point A to B along a potential shipping route (leading to an elongated buffer) based upon a precautionary effect range would lead to an overestimate of the effect as it assumes that a disturbance effect would continue even after a vessel has passed and does not consider any rapid recovery of animals following a potential disturbance event. NRW (A) suggested a stronger argument could be made for either of the two alternative approaches in REP2-099.3, and the Applicant welcomes the further clarification provided by NRW (A) in additional discussions. The Applicant highlights approach 1 was presented in Volume 2, Chapter 4: Marine mammals (APP-056), with numbers of animals presented in Table 4.44 for the impact radii (a range of 1 to 7 km, which therefore encompasses 4.08 km), which assumed 100% disturbance as the worst case scenario (see above). However, to illustrate that the Applicant has used a precautionary approach in the assessment and therefore the conclusions of no significant effect remain unchanged, the numbers of animals disturbed using the 4.08 km (as suggested by NRW (A) to provide more realism in the assessment) are presented below, in comparison to the 7 km radius.

Reference	Written Submission Comment	Applicant's response

Table 1: Number of animals disturbed for the 7 km radius used in Volume 2, Chapter 4: Marine mammals (APP-056), compared to the number of animals disturbed using the 4.08 km modelled radius.

Species	No. of animals disturbed (7 km)	% of MU	No. of animals disturbed (4.08 km)	% of MU
Harbour porpoise	43	0.07%	15	0.02%
Bottlenose dolphin	1	0.09%	1	0.03%
Short-beaked common dolphin	1	0.0001%	1	0.00003%
Risso's dolphin	5	0.04%	2	0.01%
Minke whale	3	0.01%	1	0.004%
Grey seal	28	0.21%	10	0.07%
Harbour seal	1	0.01%	1	0.004%

The number of animals disturbed for the 4.08 km modelled range still represents a precautionary approach as it does not use dose-response but illustrates fewer animals would be disturbed using this value and, therefore does not change the conclusions of the assessment in Volume 2, Chapter 4: Marine mammals (APP-056) (which uses the numbers of animals from the 7 km impact range). The Applicant understands NRW (A)'s suggestion that using the 4.08 km range may reduce some of the over precaution in assuming 100% disturbance but considers that the approach taken in the application ensures a precautionary assessment whilst incorporating evidence from scientific literature.

The Applicant acknowledges a dose response approach from Benhemma le Gall *et al.* (2021) could be derived, but highlights (as detailed in paragraph 4.9.5.23 of Volume 2, Chapter 4: Marine mammals (APP-056)) that no apparent response was observed at 4 km (which is less than the maximum modelled disturbance range of 4.08 km). Using the dose response suggested would assume no animals are impacted at 4 km, rather than the 15 animals derived from the 4.08 km radius approach outlined above. Given that the assessment was based on behavioural impact range of up to 7 km, the Applicant's approach was more precautionary as it provided a ~3 km buffer around the modelled impact range and assumed no dose response applied such that all animals within this range would be behaviourally disturbed. Therefore, using a dose response would reduce the number of

Reference	Written Submission Comment	Applicant's response
		animals estimated to be disturbed, although noting that this would not change the overall conclusion of the assessment. The Applicant has provided extensive detailed justification of its approach in the Applicant's Response to Relevant Representation from NRW (A) Impacts on Marine Mammals from Elevated Underwater Sound Due to Vessel Use (PDA-009). The assessment is based upon a worst-case scenario both for the Mona Offshore Wind Project alone and in-combination with other projects, with multiple levels of precaution already built into the assessment. The Applicant considers there is adequate justification provided for the assessment of the Mona Offshore Wind Project alone or in-combination with other projects and for the determination of low magnitude effects from underwater sound from vessel use.
REP2-099.5	1. Response to Errata Sheet 1.2 Marine Ornithology Given the numbers of errors identified by NRW (A), other interested parties, and the Applicant themselves across the multiple offshore ornithology related submission documents, together with the concerns NRW (A) have raised regarding the implications these errors may have on the assessments within the Environmental Statement (ES) and Habitats Regulation Assessment (HRA), we agree with the Applicant that updated versions of these documents should be submitted by the Applicant into the examination. We welcome the Applicant's commitment to provide updated versions (tracked and clean) of these documents at Deadline 2. We suggest that these documents should rectify these errors, including all of those identified in the Errata list [REP1-044] and any further errors noted in our Written Representations [REP1-056] and those of other interested parties. We also recommend that the impact assessments are updated accordingly to take account of these errors. We note the request by the Examining Authority (ExA) in their Rule 17 letter of 15th August 2024 for the Applicant to provide by no later than Deadline 3 'an additional submission consisting of an assessment of effects on ornithological features (for both the EIA and HRA) using the methods and parameters highlighted by NRW(A) and JNCC during pre-application consultation, and in their relevant representation [RR-011; RR-033] and written representations [REP1-056; REP1-066 and REP1-067]'. Therefore, we will provide further advice following detailed review of these	The Applicant notes NRW (A) comment and acknowledges that NRW (A) and the JNCC have identified discrepancies within the Environmental Statement and HRA application materials in their relevant representations (RR-011 and RR-033, respectively) and written representations (REP1- 056 and REP1-066/REP1-067, respectively). Appreciating the need for clarity in the application material, the Applicant submitted revised offshore ornithology application EIA and HRA material (as tracked and clean versions) at Deadline 2 to address the errata. Where errata follow through multiple application documents, these errata have been corrected throughout. The revised materials submitted at Deadline 2 include: • Volume 2, Chapter 5: Offshore Ornithology (REP2-016) • Volume 6, Annex 5.2: Offshore Ornithology Displacement Technical Report (REP2-018) • Volume 6, Annex 5.3: Offshore Ornithology Collision Risk Modelling Technical Report (REP2-020) • Volume 6, Annex 5.5: Offshore Ornithology Apportioning Technical Report (REP2-022) • Volume 6, Annex 5.6: Offshore Ornithology Population Viability Analysis Technical Report (REP2-024) • HRA Stage 1 Screening Report (REP2-012) • HRA Stage 2 Information to Support an Appropriate Assessment (ISAA) Part Three: Special Protection Areas (SPAs) and Ramsar Sites Assessments (REP2-010)

Reference	Written Submission Comment	Applicant's response
	updated assessments once they are submitted into the examination by the Applicant.	• HRA Integrity Matrices (REP2-014). The Applicant has also submitted, alongside the revised application documents, a Schedule of Changes to the Offshore Ornithology EIA and HRA Documents (REP2-087). This document describes the changes made to the offshore ornithology EIA and HRA application materials, including a summary of the change, details of where the change has been made, the reason for the change and how it corresponds to the errata identified in the Errata Sheet (REP1-044) submitted at Deadline 1. The revisions to the offshore ornithology EIA and HRA application materials at Deadline 2 have not resulted in any change to the conclusion of the assessments. The JNCC submitted comments on the Errata Sheet (REP1-044) at examination Deadline 2. The Applicant has identified one comment from the JNCC in regard to the Burbo Bank Extension abundance estimate for black-legged kittiwake that was not addressed in the revised offshore ornithology EIA and HRA documents submitted at Deadline 2. This is comment REP2-096.14 in the Applicant's Response to JNCC Errata Submission (S_D3_3). The Applicant has included this in the Errata Sheet (S_DP_1 F04) submitted at Deadline 3 and has also provided further information in an Offshore Ornithology Errata Clarification Note (S_D3_26) submitted at Deadline 3 to demonstrate the implication of this errata to the predicted impacts in the context of both the EIA and HRA to provide assurance that this does not affect the conclusions of the assessments presented at application. The Applicant has responded to the Examining Authority's Rule 17 letter at Deadline 2 (REP2-077). This response details the Applicant's approach to clarifying the application approach and providing additional information in accordance with the SNCB advice. The Applicant has submitted an Offshore Ornithology Supporting Information Technical Note (S_D3_19) at Deadline 3, which presents an assessment of apportioned displacement and collision impacts using a range-based approach for the Mona Offshore Wind Project alone, in accordance with the SNCBs' advice. The Applicant has engaged with the JNCC and NRW (A) on the scope and presentation of this supporting information technical note to ensure this sufficiently addresses the SNCBs' concerns and the Examining Authority's Request for Further Information – Rule 17 (PD-012/PD-012a).
REP2-099.6	We understand that the Applicant is working on an updated cumulative effects assessment approach to 'gap fill' for historical projects where data are unavailable and note that the Applicant plans to discuss this with	The Applicant welcomes the NRW (A)'s response and can confirm that a meeting was held on 29 August 2024 between the Applicant, NRW (A), Natural England and the JNCC regarding a 'gap-filling' exercise to consider

Reference	Written Submission Comment	Applicant's response
	NRW (A), Natural England and JNCC in a call scheduled for 29th August 2024. We also note the ExA request in their Rule 17 letter of 15th August 2024 that the Applicant's additional submission requested by Deadline 3 '*should include an in-combination assessment using the SNCB's proposed methodology for gap-filling for historic projects*.' Therefore, we will provide further advice, including regarding levels of significance of cumulative and in-combination impacts, following detailed review of these assessments once they are submitted into the examination by the Applicant.	historic offshore wind projects in accordance with SNCBs advice. The approach presented by the Applicant was broadly welcomed by the SNCBs. The Applicant has appended the meeting minutes from the meeting on 29 August 2024 to the Offshore Ornithology Cumulative Effects Assessment and In-combination Gap-filling Historical Projects Technical Note (S_D3_12) submitted at Deadline 3 and has included a consultation table (Table 1.1 of the Offshore Ornithology Cumulative Effects Assessment and In-combination Gap-filling Historical Projects Technical Note (S_D3_12)) within the technical note to outline how comments received during and after the meeting have been considered. The Offshore Ornithology Cumulative Effects Assessment and In-combination Gap-filling Historical Projects Technical Note (S_D3_12) takes account of all errata identified in the application materials to date and has been undertaken in accordance with the SNCB advice with respect to presenting an assessment of apportioned displacement and collision impacts using a range-based approach. The Offshore Ornithology Cumulative Effects Assessment and In-combination Gap-filling Historical Projects Technical Note (S_D3_12) concludes that with the addition of indicative numbers for historical offshore wind projects, there is no potential for significant cumulative effects or adverse effects on site integrity from the Mona Offshore Wind Project in-combination with other plans and projects.
REP2-099.7	**2. Comments on Offshore Ornithology Assessment of Pen y Gogarth / Great Orme's Head SSSI [REP1-037]** **2.1 Key Comments** We welcome that the Applicant has now submitted a detailed quantitative assessment of impacts of the Mona project alone on the kittiwake, guillemot and razorbill features of the Pen y Gogarth / Great Orme's Head SSSI. This was advised to be undertaken by NRW (A) in both our Relevant Representation [RR-011], and with further detail on this request provided in our Written Representation [REP1-056]. The Applicant's assessment document was submitted ahead of submission of our Written Representation and hence produced before the further detail in REP1-056 was available. As a result, there are some aspects of the assessment approach that we have concerns/queries regarding, or that we would not agree with/advise are undertaken: • Non-breeding season age class apportioning (see **Section 2.2.1** below).	The Applicant notes NRW (A)'s comments and has responded in detail in the rows below. To confirm, the Applicant will submit a revised Offshore Ornithology Assessment of Pen y Gogarth / Great Orme's Head SSSI note at Deadline 4 to address, where required, the matters raised by NRW (A). The revisions to the assessment are not expected to alter the conclusions of the assessment.

Reference	Written Submission Comment	Applicant's response
	• Calculation of non-breeding season apportionment rates to the Pen y Gogarth / Great Orme's Head SSSI (see **Section 2.2.1** below). • Concerns regarding the foraging ranges used for guillemot and razorbill (as raised by JNCC in their Written Representations, REP1-066, with which we agree) and potential implications of this for the breeding season apportionment rate calculations for the Special Site of Scientific Interest (SSSI) (see **Section 2.2.2** below). • Kittiwake seasonal definitions and calculations of Environmental Impact Assessment (EIA) scale seasonal collision totals used in calculating seasonal collision impacts to the SSSI (see **Section 2.2.3.1** below). • Need to consider and present displacement impacts across the full range of SNCB advised % displacement and % mortality rates for auk displacement assessments and where predicted impacts equate to 1% or more of baseline mortality of the colony to give further consideration through Population Viability Analysis (PVA) (see **Sections 2.2.3.2** and **2.2.3.3** below). • Need to undertake a cumulative assessment of impacts as well as assessment of project alone impacts (see **Section 2.2.4** below). Further information on each of these issues is set out in our detailed comments below.	
REP2-099.8	**2.2 Detailed Comments** **2.2.1 Non-breeding season apportionment of impacts, including age classes (relevant to all three features of the SSSI)** For the assessment of impacts to the Pen y Gogarth / Great Orme's Head SSSI, the Applicant has taken the same approach to apportioning impacts to adults in the non-breeding season as taken for Special Protection Area (SPAs) in their submission documents, i.e. to use a theoretical generalised stable age structure (Furness 2015) to apportion impacts to adults in the non-breeding season from the SSSI. It also appears that in the approach undertaken by the Applicant in REP1-037, the Applicant has taken the same approach as used for SPAs in their submission of taking the EIA scale all age class collision figure/abundance figure for displacement for the non-breeding season(s) and applied an apportionment rate for proportion of adults (based on stable age structure from Furness 2015) and an apportionment rate for proportion of adult	The Applicant has provided a detailed response on non-breeding season apportionment of impacts in response to NRW (A)'s written representation comments REP1-056.77 to REP1-056.80 in the Applicant's Appendix to Response to WRs: NRW (REP2-080). Adult impacts were apportioned to the adult Biologically Defined Minimum Population Scales (BDMPS) population as stated in paragraph 1.3.1.4 of Offshore Ornithology Assessment of Pen y Gogarth/ Great Orme's Head SSSI (REP1-037). With regards to the apportionment of age-classes during the breeding and non-breeding season, the Applicant will update the apportionment of adults in a revised version of Offshore Ornithology Assessment of Pen y Gogarth/ Great Orme's Head SSSI (REP1-037) using age-classes presented in Table 1.5 of Volume 6, Annex 5.5: Offshore ornithology apportioning technical report (REP2-022). This will be submitted at Deadline 4.

Reference	Written Submission Comment	Applicant's response
	birds within the relevant seasonal Biologically Defined Minimum Population Scale (BDMPS). As noted in our Relevant Representations [RR-011] and Written Representations [REP1-056], we did not agree with these approaches regarding SPAs, and again note here that the Applicant's approach essentially double apportions to adults as the BDMPS proportions in the tables in Appendix A of Furness (2015) already takes account of the number of adults likely to be present in the BDMPS, so it is not appropriate to correct (a second time) for the proportions of adults (or adult type in the case of kittiwake) in the BDMPS. Therefore, we recommend that no age class apportionment is undertaken for the non-breeding season(s) and that the apportionment to the SSSI for the non-breeding season(s) is undertaken based on the proportion of the SSSI adult birds (we suggest this is based on use of the adult proportion of birds for the UK western non SPA colonies in the Furness 2015 Appendix A tables rather than Rathlin Island SPA; as was done at Awel y Môr) across the BDMPS total of birds of all ages for each relevant non-breeding BDMPS season.	The Applicant notes that the proportion of adult birds in the BDMPS (from Furness, 2015) originating from "Rathlin Island" and "Western non-SPA" is slightly different for common guillemot during the non-breeding season (proportion of adults in UK western waters for the West coast UK non-SPA populations is 0.95 and 1 for Rathlin Island, Furness (2015)) and razorbill during the winter (proportion of adults in UK western waters for the West coast UK non-SPA populations is 0.4 and 0.3 for Rathlin Island (Furness, 2015)). There is, however, no difference for black-legged kittiwake in autumn and spring migrations (proportion of adults in UK western waters for the West coast UK non-SPA populations is 0.8 and 0.8 for Rathlin Island) and for razorbill during the migrating seasons (proportion of adults in UK western waters for the West coast UK non-SPA populations is 0.02 and 0.02 for Rathlin Island). Given the marginal differences, the application of the "Western non-SPA" proportion would not alter the assessment and the conclusion of the assessment.
REP2-099.9	However, we do note that in this case, as the numbers of birds involved are small, our preferred approach to non-breeding season age class apportionment and apportionment method to the SSSI does not result in significant differences in the adult abundances of birds (auks) or adult densities (kittiwake) apportioned to the site in terms of annual totals. However, this may not be the case for other offshore wind development sites where higher numbers/densities of birds are recorded. Therefore, we would not advise that the approach the Applicant has taken to apportioning non-breeding season impacts to SSSI colonies is followed by other projects where assessment of impacts to SSSI breeding seabird colonies is required.	
REP2-099.10	**2.2.2 Breeding season apportionment (guillemot and razorbill)** With regard to the breeding season apportionment rate calculations for the Pen y Gogarth / Great Orme's Head SSSI colony of 15.6% for guillemot and 21.1% for razorbill, we are content with the use of the NatureScot apportionment tool to calculate these. However, we note the concerns raised by JNCC in their Written Representations [REP1-066] regarding the guillemot and razorbill foraging ranges used by the Applicant and the uncertainties this has on the calculated apportionment rates to colonies (with which we agree – note the advised foraging	Table 1.7 of the HRA Stage 1 Screening Report (REP2-012) submitted at Deadline 2 corrected the foraging ranges for common guillemots and razorbills, and the 'exceptions' that misinterpreted the JNCC's advice from their Section 42 response were removed. No sites were required to be included or excluded in Volume 6, Annex 5.5: Offshore ornithology apportioning technical report (REP2-022), and as a result of this change. Therefore, there are no changes to the apportioning values to the Pen y Gogarth/Great Orme's Head SSSI for common guillemot and razorbill and no changes to the conclusions of the assessment.

Reference	Written Submission Comment	Applicant's response
	ranges, to which NRW (A) agreed, were provided by JNCC to the Applicant following EWG5, see Section D.6.2 of Appendix D of the technical engagement plan, E4.1). Therefore, further information is required from the Applicant as to whether this issue would alter the breeding season apportionment rates to this colony for these two features.	
REP2-099.11	**2.2.3 Species assessments** **2.2.3.1 Kittiwake assessment** We welcome that in this assessment that the Applicant has followed NRW (A)'s recommendation in our Relevant Representations [RR-011] to use a breeding season adult rate of 95.2% for age class apportionment (i.e. to take a precautionary approach of assuming that all adult type kittiwakes recorded in the site-specific surveys in the breeding season are adults).	The Applicant welcomes NRW (A)'s comment.
REP2-099.12	We are content with the approach used to calculate the 15.6% apportionment value for use for apportioning impacts to the colony in the breeding season (as set out in the apportioning technical report, APP-095). However, we do not agree with the approach taken for apportioning in the non-breeding seasons for the reasons set out in Section 2.2.1 above, although we note that this does not result in a significant difference to the number of apportioned collisions to the site.	Please see the Applicant's response to REP2-099.8.
REP2-099.13	We welcome that the Applicant has presented predicted impacts from collision and displacement impacts separately in Table 1-2 of REP1-037. This is because, as noted in our Written Representations [REP1-056], NRW (A) does not recommend that displacement is assessed for kittiwake as we currently consider the evidence base to be insufficient (as advised to the Applicant at PEIR). Hence, we have not provided advice/comment on the displacement aspect of the kittiwake assessment and will base our advice on the predicted collision impacts only for this species.	The Applicant notes NRW (A)'s comment.
REP2-099.14	In PDA-008, the Applicant's response to Relevant Representations (specifically response to reference RR-011.3), the Applicant has indicated that they have taken an approach for kittiwake collision of splitting in half the monthly collision estimates for April and August and applying these across two seasons (April: half in pre-breeding/spring migration and half in the breeding season; August: half in breeding season and half in post-breeding/autumn migration). From the results presented in Table 1-2 of	The Applicant notes NRW (A)'s comment. To address the JNCC's relevant representation comments RR-011.3, RR-011.6 and NRW (A)'s relevant representation comment RR-033.10 (as presented in the Applicant's Response to Relevant Representations (PDA-008)), the months used within each bio-season for black-legged kittiwake were corrected in the revised Volume 2, Chapter 5: Offshore ornithology (REP2-016) submitted at Deadline 2. The collision estimates for the bio-seasons within Volume 2,

Reference	Written Submission Comment	Applicant's response
	REP1-037 it appears that this approach has again been taken in the assessment of kittiwake collision to Pen y Gogarth / Great Orme's Head SSSI. However, clarification is required from the Applicant as to whether this is the case. If this approach has been taken, as noted in our Written Representations [REP1-056], this approach of splitting monthly collision impacts across two different seasons was not discussed during the EWG and it is unclear why the months above have been split across seasons for kittiwake as from Table 5.14 of the Offshore Ornithology Chapter [APP-057], the seasonal definitions for this species do not have any months where part falls in one season and another in another season. Furness (2015) defines the full breeding season for kittiwake as March-August, we would advise this definition is used and then adjusting the non-breeding season definitions in Furness (2015) accordingly to ensure no months are considered in two seasons. If the approach of splitting collision estimates from one month across multiple seasons has been taken in this assessment, then we advise the Applicant reconsiders its EIA seasonal collision predictions for kittiwake and hence any apportioned collision impacts to the SSSI (as per our advice in our Written Representations, REP1-056).	Chapter 5: Offshore ornithology (REP2-016) used the 'full breeding season' for all species and were adjusted accordingly for the non-breeding season as recommend by the SNCBs. Because the Offshore Ornithology Assessment of Pen y Gogarth/ Great Orme's Head SSSI was submitted at Deadline 1 (REP1-037), collision estimates using the full breeding season were not corrected in the document. Therefore, the Applicant will submit a revised Offshore Ornithology Assessment of Pen y Gogarth/Great Orme's Head SSSI at Deadline 4 with collision estimates based on the 'full breeding season' and adjusted for the non-breeding season as reported in Volume 2, Chapter 5: Offshore ornithology (REP2-016). The revisions to the assessment are not expected to alter the conclusions of the assessment.
REP2-099.15	As noted in our Relevant Representations [RR-011] and Written Representations [REP1-056], NRW (A) will base our advice on collision impacts based on the stochastic Collision Risk Modelling (sCRM) outputs using the specific input parameters as provided by Natural England (and agreed by NRW (A)) during the Expert Working Group (EWG), including use of the species-group avoidance rates – in the case of kittiwake this is the all gull rate of 0.9928 ± 0.0003. As was advised to the Applicant by the SNCBs (NE/NRW/JNCC) during the EWG this is because paucity of offshore, species-specific data undermines the confidence we can place in species-specific rates at this stage, and hence we currently recommend that the species group avoidance rates are used in assessments. We acknowledge and welcome that the Applicant has presented in Table 1-2 of REP1-037 the predicted collision figures for kittiwake at the Pen y Gogarth / Great Orme's Head SSSI for both the NRW (A) advised species-group avoidance rate and the Applicant's preferred species-specific avoidance rate. However, we note our comments above regarding the approaches to the non-breeding season apportionment of impacts to the SSSI and to the seasonal definitions/split of monthly collision estimates above and therefore, await clarification	The Applicant notes and welcome NRW (A)'s comments on the presentation of both species-specific and species-group avoidance rates. Please see the Applicant's response to REP2-099.8 on non-breeding season apportionment of impacts to the Pen y Gogarth/ Great Orme's Head SSSI and REP2-099.14 on the seasonal definitions/split of monthly collision estimates. To confirm, the Applicant will submit a revised Assessment of Pen y Gogarth/Great Orme's Head SSSI, amending these aspects of the assessments as advised by the SNCBs, at Deadline 4. The revisions to the assessment are not expected to alter the conclusions of the assessment.

Reference	Written Submission Comment	Applicant's response
	and/or further updates from the Applicant regarding this before we can make further comment on the significance of collision impacts on the kittiwake feature of the SSSI.	
REP2-099.16	**2.2.3.2 Guillemot assessment** We do not agree with the approach taken for apportioning in the non-breeding seasons (see Section 2.2.1 above), although we note that this does not result in a significant difference to the apportioned abundance of birds to the site in the non-breeding season.	The Applicant welcome NRW(A)'s comments. Please see the Applicant's response to REP2-099.8 on non-breeding season apportionment of impacts to the Pen y Gogarth/ Great Orme's Head SSSI. To confirm, the Applicant will submit a revised Assessment of Pen y Gogarth/Great Orme's Head SSSI, amending these aspects of the assessments as advised by the SNCBs, at Deadline 4. The revisions to the assessment are not expected to alter the conclusions of the assessment.
REP2-099.17	As noted in Section 2.2.2 above, we are currently unclear as to whether the issues raised by JNCC with the guillemot foraging ranges used by the Applicant (with which we agree) will have implications for the breeding season apportionment rate to the SSSI colony, and hence further information is required from the Applicant regarding this aspect.	Please see the Applicant's response to REP2-099.10.
REP2-099.18	We note that it is unclear as to how the Applicant has calculated the baseline mortality figure of 457.87 for guillemot at Pen y Gogarth / Great Orme's Head SSSI presented in Table 1.3 of APP-095 – based on using a colony size of 3,578 adults (as presented in Table 1.3 of APP-095, which we assume is based on the 2023 Seabird Monitoring Programme (SMP) count), we calculate the baseline mortality of the colony to be 218 birds (using adult mortality rate as we have advised in our Relevant Representations, RR-011). This has implications for the % baseline mortality that the predicted apportioned impacts across the range of advised rates equates to and where within this range the predicted impacts exceed 1% of baseline mortality – for example for the Applicant's preferred rate of 50% displacement and 1% mortality: • if the baseline mortality of 458 birds (as presented by the Applicant in APP-095) is used, then the predicted annual mortality to the SSSI equates to less than 1% of baseline mortality. However, • if the baseline mortality of 218 birds (as calculated by NRW (A)) is used, then the predicted mortality for this range equates to greater than 1% of baseline mortality at 1.37%, which requires further consideration.	The Applicant understands this comment refers to Table 1.3 in Volume 6, Annex 5.6: Offshore Ornithology Population Viability Analysis Technical Report (APP-096 and REP2-024) rather than Table 1.3 in Volume 6, Annex 5.5: Offshore Ornithology Apportioning Technical Report (APP-095 and REP2-022). The Applicant notes that this discrepancy is specific to Table 1.3 of Volume 6, Annex 5.6: Offshore ornithology population viability analysis technical report (of APP-096 and REP2-024), where the background mortality presented in Table 1.3 used an incorrect mortality rate rather than an adult specific mortality rate (of 0.061). This errata has been captured with the Errata Sheet (S_DP_1 F04) submitted at Deadline 3. This discrepancy only occurs within Table 1.3 of Volume 6, Annex 5.6: Offshore Ornithology Population Viability Analysis Technical Report (APP-096 and REP2-024) and the impacts presented within the rest of the document uses the correct 0.061 adult mortality rate. However, the input data to Volume 6, Annex 5.5: Offshore Ornithology Population Viability Analysis Technical Report (APP-095 and REP2-024) was based on the correct mortality rates as shown in Appendix A: Seabird PVA Parameter Log of Volume 6, Annex 5.5: Offshore Ornithology Population Viability Analysis Technical Report (APP-095 and REP2-024). To demonstrate that the correct rates were used, please find below explanation:

Reference	Written Submission Comment	Applicant's response
		As presented in Table 1.5 of Volume 6, Annex 5.5: Offshore Ornithology Population Viability Analysis Technical Report (REP2-024), the impact during the breeding season was 3.3 (2.0 to 45.9) birds. The Pen-y-Gogarth / Great Orme SSSI maximum impact is 45.9 birds (when considering displacement values of 70% and 10% of mortality), with the resultant increase in baseline mortality being 21.05%. If you divide 45.9 by 21.05%, it results in 218 birds. Thus, the correct mortality rates were used for apportioning and the PVA in the application. The discrepancy in Table 1.3 is a typographic error in Table 1.3 in Volume 6, Annex 5.6: Offshore Ornithology Population Viability Analysis Technical Report (APP-096 and REP2-024) only and does not impact the conclusion of the assessment presented in Offshore Ornithology Assessment of Pen y Gogarth & Great Orme's Head (REP1-037).
REP2-099.19	We advise the Applicant revisits their calculations of baseline mortality for this species at this colony and is clear as to how they have calculated this (i.e. to present the colony size and year of count and the mortality rate the calculation is based on). We also suggest that the Applicant includes a table of annual predicted displacement mortalities across the range of advised % displacement and % mortality rates that highlights where across this range the predicted annual impacts equate to 1% or more of baseline mortality.	Please see the Applicant's response to comment REP2-099.18. Although the Applicant has clarified that the correct background mortality rate has been used in Offshore Ornithology Assessment of Pen y Gogarth & Great Orme's Head SSSI (REP1-027), the Applicant will submit the information requested by NRW (A) in an updated version of the Offshore Ornithology Assessment of Pen y Gogarth & Great Orme's Head SSSI (REP1-027) note at Deadline 4. The Applicant has submitted an Offshore Ornithology Supporting Information Technical note (S_D3_19) at Deadline 3, which presents an assessment of apportioned displacement and collision impacts for SPA sites using a range-based approach for the Mona Offshore Wind Project alone and in-combination, in accordance with the SNCBs' advice.
REP2-099.20	***2.2.3.2.1 Pen y Gogarth / Great Orme's Head SSSI guillemot PVA*** We acknowledge that in the submission, the Applicant had run a PVA for guillemot at the Pen y Gogarth / Great Orme's Head SSSI (see the PVA technical report, APP-095). We note this was run for the breeding season apportioned impacts to the colony only and for impact scenarios of 30% displacement and 1% mortality, 50% displacement and 1% mortality, and 70% displacement and 10% mortality (so covered the worst- and best-case scenarios of the NRW (A) advised range and the Applicant's preferred rates). Whilst the Applicant has not re-run the PVA to cover the full annual predicted impacts, we do acknowledge that the non-breeding season apportioned impacts are very small and would add a marginal	The Applicant notes and welcome NRW (A)'s comments that a Population Viability Analysis (PVA) accounting for the full annual impacts is unlikely to be required as this would not make a material difference to the outcomes of the impact assessment.

Reference	Written Submission Comment	Applicant's response
	increase to the breeding season impacts. Therefore, we consider that there is unlikely to be a need to re-run any PVA to account for the full annual impacts as this would not make a material difference to the outcomes of the impact assessment.	
REP2-099.21	We have reviewed the input parameters used by the Applicant in the PVA (as set out in Section A.1.1 of Appendix A of APP-095). We note that the standard deviations (SDs) used for the survival rates for the immature age classes are in fact the standard errors (SEs) presented for these age classes in Horswill & Robinson (2015). Whilst SD and SE are different, we do not believe that this error should materially alter the median counterfactuals of growth rate and population size output by the PVA tool and as presented in Table 1.9 of APP-095, but has the potential to affect the simulated population sizes as presented in Table 1.9 of APP-095.	The Applicant notes NRW (A)'s comments and will amend the assessment to use the standard deviations (SDs) in an update to the Offshore Ornithology Assessment of Pen y Gogarth & Great Orme's Head SSSI (REP1-027) submitted at Deadline 4.
REP2-099.22	However, we are currently unclear as to the source and years of the productivity rate of 0.532 (SD 0.089) used by the Applicant in the PVA. This is because this does not appear to fit with any of the pre-populated rates in the PVA tool for this species and nor does it appear to fit with any of the guillemot productivity rates listed in Horswill & Robinson (2015). Clarification is required on this from the Applicant before agreement to be reached on whether a suitable rate has been used in the PVA model, noting that for the Awel-y-Môr models NRW (A) advised the Applicant to use the national rates in Horswill & Robinson (2015).	As discussed during the fourth offshore ornithology Expert Working Group (Appendix D of Technical Engagement Plan Appendices - Part 1 (A to E) (APP-042)), updated productivity rates were used for the PVA. These were requested from the British Trust for Ornithology and sent to the Applicant on 21 July 2023. As shown in Table 5.15 in Volume 2, Chapter 5: Offshore ornithology (REP2-016), the average productivity rate for common guillemot was calculated as 0.583. However, for common guillemot, an average productivity of 0.532 was used for the Great Ormes PVA and the Little Ormes Head PVA presented in Volume 6, Annex 5.6: Offshore ornithology population viability analysis technical report (REP2-024), which is the average productivity rate for razorbill and not guillemot. The Applicant stresses that the estimates from the PVA model presented at application in Volume 6, Annex 5.6: Offshore ornithology population viability analysis technical report (REP2-024) are more precautionary because the productivity rate of 0.532 used at application (Volume 6, Annex 5.6: Offshore ornithology population viability analysis technical report REP2-024) is below the 0.583 rate which has been agreed with the SNCBs during the fourth offshore ornithology Expert Working Group (Appendix D of Technical Engagement Plan Appendices - Part 1 (A to E) (APP-042)). However, the Applicant acknowledges the discrepancy and has included this in the Errata Sheet (S_DP_1 F04) submitted at Deadline 3. An updated PVA for the Pen y Gogarth/Great Orme's Head SSSI and Creigiau Rhiwledyn/Little Orme's Head SSSI will be provided in an update to the Offshore Ornithology Errata Clarification Note submitted at Deadline 4. The PVA for the Pen y

Reference	Written Submission Comment	Applicant's response
		Gogarth/Great Orme's Head SSSI will also be updated in a revised version of the Offshore Ornithology Assessment of Pen y Gogarth & Great Orme's Head SSSI (REP1-027) submitted at Deadline 4.
REP2-099.23	**2.2.3.3 Razorbill assessment** We do not agree with the approach taken for apportioning in the non-breeding seasons (see **Section 2.2.1** above), although we note that this does not result in a significant difference to the apportioned abundance of birds to the site in the non-breeding season.	Please see the Applicant's response to comment REP2-099 on non-breeding season apportionment of impacts to the Pen y Gogarth/ Great Orme's Head SSSI.
REP2-099.24	As noted in **Section 2.2.2** above, we are currently unclear as to whether the issues raised by JNCC (with which NRW (A) agree) with the razorbill foraging ranges used by the Applicant will have implications for the breeding season apportionment rate to the SSSI colony, and hence further information is required from the Applicant regarding this aspect.	Please see the Applicant's response to REP2-099.10.
REP2-099.25	We note that, as the Applicant presents in REP1-037, at the worst-case scenario of 70% displacement and 10% mortality the predicted impact exceeds 1% of baseline mortality. However, the Applicant again relies solely on the predicted impacts for its preferred range of 50% displacement and 1% mortality to reach its conclusion that no PVA is required for impacts to this feature and there would be no detectable impact from the project alone on the razorbill population of the Pen y Gogarth / Great Orme's Head SSSI. As has been advised during our Relevant Representations [RR-011] and in our Written Representations [REP1-056], NRW (A) consider that predicted impacts across the full range of advised % displacement (30-70%) and % mortality rates (1-10%) should be presented and considered. Sections 2.1.2.4.1 and 2.1.2.4.4 of our Written Representations [REP1-056] provide details for why NRW (A) consider that a range of % displacement and % mortality rates are appropriate to consider for assessing displacement impacts to auks. Therefore, we recommend that the Applicant includes presentation of the full annual matrix of predicted impacts, which highlights where across the range the annual predicted impacts equate to 1% or more of baseline mortality of the colony. We also note the advice above (and provided previously to the Applicant in the EWG and in our Written Representations REP1-056) that where the predicted annual mortality equates to 1% or more the baseline mortality of the colony, then further	The Applicant has provided a revised Offshore Ornithology Assessment of Pen y Gogarth /Great Orme's Head SSSI (S_D1_25 F02) at Deadline 3 that presents predicted impacts across the full range of advised % displacement (30-70%) and % mortality rates (1-10%) for common guillemot and razorbill. Where the predicted annual mortality equates to 1% or more the baseline mortality of the colony, PVA has been undertaken.

Reference	Written Submission Comment	Applicant's response
	consideration is required through PVA. NRW (A) would be happy to provide advice to the Applicant on PVA input parameters for razorbill.	
REP2-099.26	**2.2.4 Cumulative Effects** We also suggest that the Applicant considers assessment of impacts to the SSSI of the Mona project cumulatively with other plans and projects. This is particularly as the Awel-y-Môr, Morgan generation assets and Morecambe generation assets projects are all located within foraging range of all three features of the Pen y Gogarth / Great Orme's Head SSSI.	The assessment of impacts to the Pen y Gogarth /Great Orme's Head SSSI of the Mona Offshore Wind Project cumulatively with other plans and projects will be considered in the updated version of this assessment submitted at Deadline 4.