Outlook

ABP/319866/24 FI submission

From Housing Manager DAU <Manager.DAU@npws.gov.ie>
Date Wed 10/21/2026 3:03 PM
To Marine <marine@pleanala.ie>

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A Chara,

Please find attached the Department's submission on the above referral.

Le meas,

Joanne

Joanne Lyons
Higher Executive Officer
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An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Your Ref: **ABP/319866/24**

Our Ref: **Plan03814/2024**
(Please quote in all related correspondence)

21/10/26

Marine / Climate Section
An Coimisiún Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Via email to marine@pleanala.ie

Re: Notification under the Planning and Development Act, 2000, as amended.

Proposed Development: Further Information - North Irish Sea Array Offshore Wind Farm.

A Chara

I refer to Further Information correspondence received in connection with the above. Outlined below are nature conservation related observations/recommendations of the Department co-ordinated by the Development Applications Unit under the stated heading(s).

The Department welcomes the additional data and analyses presented by the applicant in its response.

1. ORNITHOLOGY

1.A. Waterbirds and terrestrial bird species

1. A. i. Baseline information - waterbirds (FI ref. 8a.iv)

It is noted that additional monitoring was undertaken during the autumn migration. The assessment relies heavily on the results of the non-seabird Migratory Collision Risk Model (mCRM) to inform the potential impacts of the proposed development on migratory waterbirds, seabirds and terrestrial bird species.

Three boat-based surveys were undertaken to record migratory birds within the proposed array area. These surveys were conducted exclusively in November 2024 and may have some potential limitations at detecting and identifying species at height. That

notwithstanding, it is noted that it confirms that substantial numbers of certain species were recorded during migration periods. Consequently, the assertion that the surveys "*provided a strong indication of the species composition of the migratory assemblage that utilises the offshore flyways that might see birds pass through the Proposed Development array area*" may merit further probing by the Commission.

The applicant's conclusion is subject to it reaffirming the coastal and offshore Vantage Point (VP) locations provide direct visibility of, or survey coverage across, the proposed array footprint.

The Department notes the details provided in the applicant's response addressing the point made for radar-based surveys. In particular, radar-based surveys could have been used to identify peak migration events for both birds and bats, quantify rates of movement, estimate abundance and provide more information on flight heights and movement corridors in proximity to the proposed development.

Given the reliance placed on the mCRM, there may remain some limited uncertainty regarding the nature of some potential impacts on migratory species.

1. A. ii. Baseline information – terrestrial birds (FI ref. 8a.v)

Reference should be made to comments above regarding data from the Autumn migration.

Similar observations regarding the vessel-based visual surveys also apply.

Given that the focal species groups are generally larger and more conspicuous birds, clarification regarding the measures implemented to minimise observer bias against smaller species, such as passerines, and to account for the likely under-detection of such species within the subsequent collision risk assessment may be helpful. This may be relevant given that many migratory bird species undertake flights at altitudes exceeding 20 metres, (e.g. Doniol-Valcroze *et al.* 2026).

In relation to the VP surveys, where the majority of observations were recorded close to shore the detection and identification of passerines at distances of one kilometre offshore is likely to be challenging, particularly when observers are simultaneously recording the movements of other bird species.

It is noted that the applicant states within the Passive Acoustic Monitoring (PAM) limitations section that "s*ome birds may fly too high on migration for their vocalisations to be captured by the acoustic recorders. However, it can be concluded using expert judgement that any birds flying at this height, especially louder species such as geese, would likely be flying above collision risk height*". While this may be the case for larger and more vocal species, quieter passerine species may not be detectable beyond approximately 100m from the recorder and may still be flying within the rotor-swept zone.

It is noted that the breeding bird surveys undertaken in 2024 commenced relatively late in the breeding season, and no early-season breeding bird surveys were conducted. This limitation may have reduced the likelihood of detecting early breeding species and

behaviours, thereby introducing a variable into the assessment of potential impacts on breeding bird populations

In the circumstances, the Department suggests that the Commission considers that in-operation radar surveys, (including daytime acoustic monitoring) be a condition of any grant of planning permission, with a clearly defined and enforceable protocol put in place prior to operation.

The protocol should specify the response actions and measures when predefined thresholds for migratory bird activity or collision risk are reached:

- Alert and verification**:** Radar detections indicating significant migratory movements or potential interaction with the turbine rotor-swept zone should trigger an alert, with additional verification where practicable.
- Increased monitoring**:** Elevated migration activity should trigger enhanced monitoring and assessment of flight direction, altitude, intensity and proximity to operating turbines.
- Turbine curtailment or shutdown**:** Where predefined thresholds indicate an elevated collision risk, the relevant turbines should be curtailed or temporarily shut down, with restart permitted only when monitoring confirms that the trigger conditions have subsided in accordance with the agreed protocol.
- Species-specific response**:** The protocol should explicitly address, inter alia, osprey, robin, linnet, meadow pipit, barn swallow goldfinch and redwing, as well as other migratory passerines, and provide for appropriate operational responses where their movements indicate potential collision risk, including where species-level identification by radar is not possible.
- Seasonal coverage**:** Monitoring should operate throughout the full spring and autumn migration periods, with provision for responding to significant migratory movements outside these periods where detected.
- Recording and review**:** All trigger events, alerts, curtailment or shutdown actions, response times and subsequent outcomes should be recorded and those records held. The effectiveness of the measures should be reviewed regularly, with thresholds and response actions revised as necessary.

Any such potential planning condition should require the submission pre-operation of a detailed Radar-Based Bird Monitoring Plan, setting out quantitative trigger thresholds, monitoring coverage, operational responsibilities, response times, shutdown and restart criteria, reporting requirements and procedures for reviewing effectiveness.

The thresholds should be established through an evidence-based assessment before operation, rather than deferred to an unspecified future review. The measures should ensure that radar detections translate into timely, proportionate and enforceable operational responses to minimize collision risk to migratory birds, taking account of the limitations of the existing vessel-based visual, vantage point and passive acoustic surveys.

1. A. iii. Impact Assessment Methodology (FI ref. 8b.vi)

Since no pre-construction radar-based survey was undertaken and due to the challenges in the survey methodologies as noted above, the value of specific mitigation measures cannot be ruled out, particularly in relation to terrestrial bird species and waterbirds/waders during peak migration periods.

It is noted that consideration has been given to turbine blade painting as a potential mitigation measure. While the applicant considers the reduction in mortality as a result of blade painting to be relatively modest, any decrease in collision risk is significant from a conservation perspective and should be given appropriate weight in the assessment and mitigation strategy.

1.B. Seabirds

The applicant has considered both the NatureScot (2023) displacement rate of 60%, with an associated mortality rate of 1–5% for auks, and its preferred assumptions of 50% displacement and 1% associated mortality within the EIAR and NIS. The consideration of these alternative scenarios provides a useful basis for assessing the potential range of effects on seabirds, particularly Common Guillemot and Razorbill, and for identifying appropriate measures to avoid, minimise and monitor those effects.

The applicant was requested to further justify its interpretation of the evidence relating to Common Guillemot and, where appropriate, to re-evaluate the data and the implications for the site-specific conservation objectives (SSCOs) of the North-west Irish Sea (NWIS) cSPA. This included consideration of the Department's observation that the development could result in a loss of area equivalent to 8.5% of the cSPA.

Appendix A21 – *Additional Guillemot Ecological Evidence Note* indicates that, following a modification to the proposed wind farm layout, the Project Footprint of Infrastructure (PFI) is estimated to represent 6.8% of the NWIS cSPA. Clarification remains important as to whether this figure incorporates the 2km buffer relevant to assessing displacement effects associated with offshore renewable energy (ORE) infrastructure on auks, as this has a material bearing on the interpretation of the potential spatial extent of effects.

The applicant's position is that direct habitat loss arising from the physical presence of infrastructure is limited to approximately 0.02% of the cSPA, and that displacement should not be equated with complete habitat loss because a proportion of birds may continue to use the affected area. In this regard, the applicant notes that, even under the NatureScot worst-case displacement assumption of 60%, approximately 40% of Guillemots would not be displaced and could continue to use the area. This is a relevant consideration when assessing the functional consequences of the development, as displacement does not necessarily mean that the entire affected area becomes unavailable to the species.

The potential effects need to be considered by the Commission in the context of the conservation purpose of the NWIS cSPA and the importance of the proposed development area to the qualifying interests. Appendix A21, paragraph 3.6.1, reports

that, on average, 10.8% of the cSPA Guillemot population occurs within the PFI plus 2 km area. This indicates that the area is regularly used by the species and that the potential consequences of displacement warrant careful consideration.

Furthermore, Appendix A15 – *MRSea Modelling for Offshore Ornithology* identifies substantial numbers and densities of both Guillemot and Razorbill within the PFI plus 2 km buffer, particularly during July and August. For Guillemot, the reported peak count was 48,941 individuals, with model-based population estimates ranging from 25,678 to 103,127 individuals and a maximum estimated density of 306 birds/km². For Razorbill, the corresponding peak count was 20,833 individuals, with model-based population estimates ranging from 11,835 to 36,830 individuals and a maximum estimated density of 130 birds/km². Based on Tables A4-2 and A4-4 of Appendix A15, the estimated abundances within this area represented approximately 18.7% of the wider survey-area estimate for Guillemot and 15.8% for Razorbill.

These findings demonstrate that the proposed development overlaps with an area of some importance to both species. While the extent to which displacement translates into functional habitat loss and additional mortality remains dependent on the assumptions applied and the birds' responses to the development, the available evidence indicates that the potential effects cannot be assessed solely by reference to the physical footprint of the infrastructure. The distribution, intensity and seasonal pattern of seabird use, together with displacement and associated mortality, are also material considerations.

The SSCOs for the NWIS cSPA focus on the abundance of the qualifying species and include attributes relating to their spatial distribution within the site. Accordingly, the key consideration is whether the development, in combination with any relevant background pressures, could pressure the ability to maintain these attributes over the relevant assessment period. The evidence of substantial Guillemot and Razorbill use within the PFI plus 2km area, coupled with the potential for displacement and associated mortality, presents a significant management challenge for the applicant in demonstrating that the relevant SSCOs will be maintained.

On the best evidence currently available, it is therefore considered challenging to conclude with full confidence that the relevant SSCOs can be maintained without robust, enforceable and adaptive mitigation and monitoring measures. This does not necessarily mean that effects on the conservation objectives are unavoidable. It highlights the importance of ensuring that the development is supported by an effective framework for managing and responding to potential impacts on seabirds throughout construction and operation.

Accordingly, the Commission may wish to consider that any grant of planning permission should include strong and clearly defined conditions requiring the implementation of a comprehensive seabird monitoring and adaptive management plan. As a minimum, this should include:

- Clearly specified measures to avoid and minimise displacement and associated mortality, informed by the best available evidence and appropriate assumptions for Guillemot and Razorbill.

- Targeted and active monitoring: A robust programme to establish baseline conditions and monitor seabird abundance, distribution, displacement and, where practicable, survival or mortality indicators within the PFI, the surrounding 2 km area and appropriate reference areas. Monitoring should be sufficiently frequent and seasonally targeted to detect meaningful changes in use of the affected area.
- Defined thresholds and triggers for action**:** Measurable indicators and pre-agreed trigger thresholds linked to the relevant SSCO attributes, with clear procedures for identifying when observed or predicted effects indicate that the conservation objectives may be under pressure.
- Mandatory adaptive responses: A binding requirement for the applicant to implement timely corrective actions where monitoring identifies adverse trends or a material risk to the SSCOs. Such actions should be specified in advance to the greatest extent practicable, with provision for operational adjustments where these are necessary and feasible.
- Reporting, review and regulatory oversight: Regular reporting, transparent evaluation of monitoring results, independent ecological oversight, where appropriate, and a clear mechanism to require additional measures if the agreed thresholds are exceeded or effectiveness is not demonstrated.
- Long-term implementation and resourcing: Appropriate arrangements to ensure that monitoring, mitigation and remedial actions are funded and maintained by the applicant and enforceable on it for the duration necessary to address the effects of construction and operation.

Any conditions attached to a grant of planning should require the applicant to put in place the detailed monitoring and adaptive management arrangements before the relevant works commence. These arrangements should establish clear responsibilities, implementation timescales and escalation procedures, rather than relying on monitoring alone to identify impacts after they have occurred.

In conclusion, the available evidence indicates that the PFI plus 2km area is used by substantial numbers of Guillemots and Razorbills and that displacement and associated mortality could place pressure on the relevant SSCOs of the NWIS cSPA. Although the applicant's assessment of direct habitat loss and the proportion of birds potentially remaining within the affected area are relevant considerations, they do not, in themselves, resolve the uncertainty surrounding the consequences for abundance and spatial distribution. An enforceable and adaptive approach will therefore be essential if the development is to proceed while safeguarding the conservation objectives. Any decision to grant permission should be supported by a clear and credible demonstration active monitoring and timely corrective action can be secured throughout the project lifecycle.

1.B. i. Baseline Environment and Data - Roseate Tern (FI ref. 8a.i)

The Commission may wish to probe how the tracking evidence was incorporated into the assessment of collision risk, barrier effects and other relevant impact pathways.

1.B. ii. Baseline Environment and Data - Red-throated Diver (FI ref. 8a.ii)

The quantitative assessments for red-throated diver, great northern diver and common scoter in Chapter 15 and the NIS rely primarily, or exclusively, on the more recent NWIS DAS dataset.

The applicant justifies this approach on the basis that the NWIS DAS provides more recent and extensive coverage of the relevant assessment areas. The HiDef surveys recorded substantially higher coastal densities of red-throated diver, including within or near the export cable corridor, during the wintering period.

1.B. iii. Baseline Environment and Data - Red-throated Diver (FI ref. 8a.iii)

The applicant has extended the assessment of Red-throated Diver displacement to 10 km and has provided additional NWIS DAS data covering the previously identified gap between the array and the coast.

Red-throated Diver is an SCI, and the wider NWIS survey comprised one survey per month during the January–March period rather than the two monthly surveys suggested by the Commission.

1.B. iv. Baseline Environment and Data - Black-headed Gull and Common Gull (FI ref. 8a.vii)

The revised regional population estimates appear to have been incorporated into parts of the assessment. The Commission may wish to probe if these estimates have been applied consistently throughout the EIAR and NIS. For example, the cumulative Common Gull assessment initially assesses predicted mortality against the revised Western Irish Sea population of 11,030 birds, but subsequently reports a percentage apparently calculated using the former population of 67,500 birds and seems to rely on that larger population when interpreting the significance of the effect.

1.B. v. Baseline Environment and Data - Breeding Season of Common Guillemot (FI ref. 8a.ix)

The additional DAS data and discussion of the marked increase and wider distribution of Common Guillemot during July are noted. The evidence presented does not necessarily demonstrate that birds recorded throughout July are exclusively post-breeding, or that breeding birds from connected colonies are no longer present within the proposed development area. This is particularly relevant because two of the cited

July surveys were undertaken on 4 and 5 July, when birds may still be associated with breeding colonies.

The observation that July abundance is substantially higher and more spatially dispersed than during April–June may indicate the onset of post-breeding dispersal and an influx of birds from a wider population. The Commission may need to reflect this in any conditions associated with a grant of permission.

1.B. vi. Sensitivities and Screening - European Shag and Great Cormorant (FI ref. 8b.ii)

The additional information indicates that European Shag and Great Cormorant have comparatively low susceptibility to collision and operational displacement. This does not necessarily support the broader conclusion that no plausible offshore impact pathway exist. Potential construction disturbance and indirect effects on prey or benthic are relevant because the proposed development is located within the NWIS cSPA, for which both species are qualifying interests.

1.B. vii. Impact Assessment Methodology - Displacement Methodology (FI ref. 8c.i)

The applicant has applied the NatureScot displacement and mortality rates and has taken scenarios exceeding the specified baseline-mortality threshold forward to Population Viability Analysis, as requested. However, it should be noted that the interpretation of the results relies substantially on the selection of the reference population. In particular, the NWIS DAS peak estimate represents the number of birds estimated to be present within the SPA during an individual survey and is not necessarily equivalent to a coherent regional or SPA population against which annual project-related mortality can appropriately be assessed. The Commission may wish to probe the applicant's addressing of the less favourable PVA scenarios as "biologically unrealistic".

1.B. viii. Impact Assessment Methodology - Black-legged Kittiwake Displacement (FI ref. 8c.ii)

The requested displacement assessment has been undertaken using 30% displacement and 1–3% mortality, with relevant scenarios taken forward to PVA. Under the 3% mortality scenario, the predicted operational effect represents a 2.823% increase in baseline mortality using the NWIS DAS population and 4.607% using the ObSERVE population. The corresponding PVA predicts reductions in population size of 16.185% and 24.919%, respectively. The applicant subsequently places substantial reliance on a regional population of 933,197 individuals.

This figure represents an adjusted autumn-migration population encompassing UK western waters, the Channel and the east and south coasts of Ireland, rather than an estimate of the population using, or ecologically connected to, the NWIS cSPA.

The Commission may wish to clarify why an autumn-migration population has been used to contextualise annual impacts incorporating effects across multiple bio-seasons.

It is noted that the assessment of impacts of construction appears to apply an effective displacement rate of 15%, although the text and tables provided in the submission describe the rate as 30% (potentially a presentational oversight).

1.B. ix. Impact Assessment Methodology - Collision Risk Modelling (FI ref. 8c.iv)

The response clarifies that Common Tern flight-height data were used as a proxy for Roseate Tern and explains the basis for this approach. The upper confidence interval reported in *Table A15.40* results in a 1.275% increase in baseline mortality against the biogeographic population, which appears inconsistent with the statement that all the assessed impacts are below 1%, but perhaps this is the average.

1.B. x. Impact Assessment Methodology - Gannet collision mortality (FI ref. 8c.v)

The applicant has presented collision estimates both with and without the 70% macro-avoidance correction. The request for Further Information has therefore largely been addressed for collision risk considered alone.

1.B. xi. Natura Impact Statement - North-west Irish Sea cSPA Conservation Objectives (FI ref. 8e.iv)

The revised NIS includes assessments of puffin, kittiwake, herring gull and fulmar against the conservation objectives of the NWIS cSPA, while cormorant and shag remain screened out (from further assessment of impact pathways arising from the offshore elements of the development).

The selection and application of the population estimates might merit interrogation. The assessments include broad regional populations of 300,427 puffins, 933,197 kittiwakes, 187,094 herring gulls and 843,783 fulmars. The Commission may need clarity on how these populations are ecologically connected to the NWIS cSPA.

For puffin, Table A5.24 indicates that the annual impact calculated using the NWIS DAS population of 674 birds reaches a mean increase in baseline mortality of 1.220% under the NatureScot upper displacement and mortality rates, with a 95% confidence interval of 0.411–2.598%. This does not appear consistent with the subsequent statement that no assessment scenario exceeded 1%.

Similarly, Table A5.32 reports an annual increase in herring gull baseline mortality of 3.701% using the cSPA citation population and 0.968% using the NWIS DAS population, with an upper confidence limit of 4.381%.

1.B. xii. Natura Impact Statement - North-west Irish Sea cSPA Red-throated Diver (FI ref. 8e.v)

Impacts on Red-throated diver have now been considered in the context of potential disturbance and displacement associated with the array area and vessel activity. There appears to be some inconsistencies between the narrative and tabulated results, including the number of birds assessed and the predicted operational mortality.

1.B. xiii. Natura Impact Statement - North-west Irish Sea cSPA Common Guillemot (FI ref. 8e.vi)

The reduction in the development footprint and the additional ecological information is noted and welcome. The Commission may need to consider conditions to any permission that the conservation objectives for common guillemot will not be pressured.

The applicant's survey data indicates comparatively high concentrations of guillemots within and around the proposed array area. *Appendix A21* reports that the PFI + 2 km buffer supports, on average, approximately 10.8% of the cSPA population while comprising approximately 6.8% of the site, indicating disproportionate use of the affected area.

The conclusion that the remaining cSPA can accommodate displaced birds appears to assume that birds will redistribute diffusely across the wider site. This assumption surmised support by site-specific location, quality and availability of suitable alternative habitat, associated prey resources or ecological carrying capacity. General evidence concerning guillemot mobility and behavioural flexibility does not, in itself, demonstrate that redistribution would occur with no potential ecological consequences.

To summarise, the further information provided in 1.B. i. to 1.B. xiii. represents a substantial body of ornithological investigation and assessment, bringing together multiple survey datasets, tracking evidence, collision-risk calculations, displacement scenarios and population viability analyses. This work has materially expanded the available evidence base and provides a valuable foundation for understanding the potential interactions between the proposed development and the seabird populations associated with the North-west Irish Sea cSPA.

The findings may be interpreted in the context of the inherent variability of the marine environment and the ecology of the species concerned. Bird abundance, distribution and behaviour can change considerably in response to season, breeding status, migration, prey availability, weather and sea conditions. Differences between datasets may also reflect variations in survey methodology, spatial coverage, timing and interannual conditions. Accordingly, the evidence supports a spectrum of interpretation, and individual survey results or modelled scenarios should be considered alongside their assumptions, limitations and wider ecological context.

Rather than addressing each interpretation in isolation, the Commission, in any conditions to a grant of planning permission, could consider a coordinated monitoring programme to provide a more efficient and robust way to assess the performance of the

development in operation and its effects on the full range of relevant seabird species by obliging the applicant to appoint an independent ornithological expert with appropriate experience in marine bird ecology, seabird survey methods, impact assessment and population modelling. The expert should oversee the monitoring programme, review results and provide transparent recommendations.

This would have the result of providing a robust and proportionate basis for managing residual uncertainty, and the Department recommends that a coordinated operational ornithological monitoring programme be established by the applicant for all relevant species. As stated earlier, the programme should be overseen by an independent ornithological expert with appropriate specialist experience and supported by an agreed monitoring protocol, clearly defined ecological thresholds and a practical response plan. Monitoring should be designed to distinguish natural environmental variability from potential development-related effects and to enable timely, evidence-led intervention where warranted.

This approach would build on the substantial work already completed, provide a transparent mechanism for evaluating actual outcomes against predicted effects, and support adaptive management throughout the operational life of the development. It would also provide a practical means of ensuring that emerging evidence is incorporated into operational decision-making and that any necessary actions are proportionate to the pressures identified.

Overall, the emphasis should be on translating the extensive assessment work into a coherent, independently overseen and adaptive management framework that supports both informed operational decision-making and the effective protection of the seabird interests of the NWIS cSPA.

2. MARINE MAMMALS

2.A. Cetacean Baseline and Sensitivity Classification (FI ref. 10.d.ii.)

Appendix A14.2, *Marine Mammal Baseline Characterisation*, provides useful additional context on cetacean sighting rates and sensitivity classifications. This represents a constructive contribution to understanding the potential sensitivity of marine mammals to the proposed development. The baseline might benefit from further characterisation, particularly given the absence of contemporary acoustic monitoring capable of detecting nocturnal and subsurface activity. Sensitivity classifications necessarily involve a degree of interpretation, and predicting behavioural responses with absolute precision is inherently challenging, given natural variability in animal behaviour and site use.

The Commission may wish to consider that where practicable, the applicant should establish a proportionate programme of pre-construction acoustic monitoring to supplement existing visual observations and improve understanding of seasonal presence, vocal activity and site use. Sensitivity classifications and behavioural

assumptions should be reviewed in light of the available evidence, with uncertainties explicitly acknowledged and incorporated into the assessment framework.

2.B. Mitigation for High-Order UXO Clearance (FI ref. 10.a.iii.)

The change from pile driving to suction bucket jacket installation is a welcome and material improvement in the proposed construction approach, with the potential to reduce underwater noise impacts associated with foundation installation. For high-order unexploded ordnance (UXO) clearance, Acoustic Deterrent Devices (ADDs) and Noise Abatement Systems (NAS) remain important components of the proposed mitigation strategy.

Although Appendix A14.1, *Underwater Noise Assessment*, presents modelling of unmitigated UXO clearance, further quantitative assessment would help demonstrate the likely performance of the proposed mitigation measures under representative Irish Sea conditions. In particular, the effectiveness of ADDs in encouraging avoidance and the noise-reduction performance of NAS should be distinguished and evaluated on their respective merits. The latter is especially important for assessing reductions in sound exposure and auditory injury risk.

The Commission may wish to consider as a condition of any grant of planning that the applicant provide source-specific, site-relevant modelling of NAS performance, including expected noise reduction, residual sound exposure levels and the resulting injury-risk ranges. ADD performance should be addressed separately, recognising that animal responses to deterrent signals cannot be guaranteed. Where exact performance cannot be established in advance, conservative assumptions, appropriate safety margins and a clearly defined verification process could be adopted.

2.C. Passive Acoustic Monitoring (PAM) (FI ref. 10.d)

Appendix A14.5, *Marine Mammal Mitigation Protocol*, outlines the proposed deployment of Passive Acoustic Monitoring (PAM) and provides a basis for further developing the detection and mitigation arrangements. Additional clarity is, however, required on how PAM will inform decisions during high-order UXO clearance and how its results will be interpreted alongside the use of ADDs and NAS.

PAM can provide valuable information on the presence of vocalising animals, particularly during darkness and periods of reduced visibility. However, detection is dependent on vocal activity, acoustic propagation, equipment performance and ambient noise. Consequently, non-detection cannot, in isolation, demonstrate the absence of marine mammals or confirm the effectiveness of deterrence. Nor should PAM alone be regarded as proof that clearance has been achieved.

The Commission may wish to consider a condition of a grant of permission that the applicant generate a defined marine mammal detection and clearance protocol combining PAM with visual observations when conditions permit, appropriate pre-

clearance searches, competent marine mammal observers and other suitable detection methods where practicable. The protocol should specify equipment performance requirements, deployment locations, detection limitations, decision criteria, communication arrangements and procedures for responding to detections or equipment failure.

ADD deployment and effectiveness should, in general, be evaluated separately from the noise-reduction performance of NAS. Clearance decisions should follow an agreed protocol incorporating the available detection evidence, prescribed observation periods and conservative decision criteria.

2.D. Underwater Noise Assessment (FI ref. 10.a.iii.)

The updated underwater noise modelling in Appendix A14.1 represents a constructive step, particularly through the adoption of the NMFS (2024) exposure criteria, bringing the assessment into closer alignment with contemporary international guidance.

As with any predictive assessment of marine mammal responses, the estimated disturbance and displacement ranges are subject to uncertainty. Behavioural responses vary between species and individuals and are influenced by context, prior exposure, environmental conditions and the availability of alternative habitat. Absolute precision in predicting the location, duration or severity of behavioural responses is therefore unlikely to be achievable. This does not, however, preclude robust assessment or effective impact management.

2.E. Cumulative Impact Assessment (FI ref. 10.a.iii. and 10.d)

The revised cumulative impact tables in Appendix A14.1, together with the broader cumulative screening in the SISAA Addendum, provide additional clarity and represent a positive development in the assessment of potential interactions with other projects.

Some variables remain in relation to baseline characterisation, behavioural assumptions and the expected performance of source-based noise reduction measures. These uncertainties are relevant when considering the potential for repeated or overlapping exposure, cumulative energetic costs and displacement from important habitat across multiple projects.

Measures must take account of the basis on which concurrent and sequential underwater noise sources have been considered, including the spatial and temporal relationship between relevant projects and the potential for repeated disturbance.

Any additional mitigation should be targeted at credible residual risks and informed by the combined evidence from the project assessment and monitoring.

2.F. Recommended Monitoring and Adaptive Mitigation Framework

The residuals identified could be addressed through a proportionate, risk-based framework extending from pre-construction through construction and, where relevant, into operation. The purpose would be to verify key assumptions, confirm that mitigation is functioning as intended and provide a clear mechanism for responding to unexpected effects.

Mitigation should follow a clear hierarchy: avoid or reduce impacts at source where practicable; apply appropriate detection, exclusion and activity-management measures; and implement additional controls where monitoring identifies a credible residual risk. Responses should be graduated according to the nature and significance of the evidence, while retaining safeguards for potentially serious effects.

3. BATS

3. A. Baseline information (FI ref. 15.A and 15.B)

The additional baseline data gathered by the applicant is noted. Details are surmised regarding the survey coverage of the vessel-based transects, and the dates and times at which these surveys were undertaken.

Based on the data presented, it is noteworthy that relatively high levels of soprano pipistrelle activity were recorded offshore. In Europe, Soprano pipistrelles are capable of seasonal movements over considerable distances, e.g. Seebens-Hoyer *et al*. (2022) and Brinkløv *et al.* (2025), and there is potential that similar movements would occur within an Irish context. Similar long distance movement data is available for Leisler's bats, e.g. Tájek and Tájková (2021).

The 2024 survey report suggests that six days of transect surveys were completed. While vessel-based surveys provide snapshot of bat activity, extrapolation of the recorded activity across the potential migratory period indicates that bats may be utilising this area. The Commission may seek to have it confirmed that this is evidenced.

Likewise, the applicant states that "*no EIAR has identified a behavioural response [of bats] to offshore lighting*".

3.B. Mitigation Measures (FI ref. 15.E and 15.F)

Given the foregoing, the Commission may wish to reflect if consideration should be given to mitigation measures for bats. For example, most bat records recorded in this application occurred during wind speeds between 1 and 4 m/s. This provides significant opportunity for effective mitigation through the utilisation of specific cut-in speeds.

The Department acknowledges that no offshore renewable energy project has identified evidence that construction or navigation lighting affects bat prey distribution or

behaviour. However, in the absence of dedicated studies, these effects cannot be excluded and should be addressed through lighting design, monitoring and adaptive management.

A Construction and Operational Lighting Management Plan should minimise unnecessary illumination through shielded, directional and appropriately controlled lighting, subject to navigation, aviation, health and safety requirements. Where feasible, monitoring should assess potential effects on bat activity and prey distribution.

Given baseline limitations, mitigation should remain adaptive. Recorded bat activity was primarily associated with wind speeds of approximately 1–4 m/s, supporting consideration of increased turbine cut-in speeds or temporary curtailment during periods of elevated activity. The assessment should also consider potential turbine attraction, altered movement patterns and collision risk, taking account of species conservation status, migration and population-level effects.

The Commission may, in the circumstances, wish to reflect on potential conditions to any grant of planning to include: -

Pre-construction monitoring**:** Requiring a Bat Monitoring Programme covering key migration periods, particularly September and October, with acoustic monitoring, meteorological data collection and reporting by suitably qualified ecologists.

Bat Mitigation and Monitoring Plan**:** Require a plan addressing seasonal and weather-related activity, potential turbine attraction, operational thresholds, curtailment measures and adaptive management.

Operational curtailment**:** Require implementation of mitigation, including consideration of increased cut-in speeds or temporary curtailment during periods of elevated risk, informed by site-specific evidence and monitoring.

Lighting management**:** Require a Construction and Operational Lighting Management Plan to minimise unnecessary illumination and potential effects on bats, while meeting relevant safety requirements.

Reporting and adaptive management**:** Require periodic monitoring reports and, where potentially adverse effects or variant mitigation are identified, and the undertaking of measures to address these pressures.

You are requested to send any further communications to this Department's Development Applications Unit (DAU) at manager.dau@npws.gov.ie, or to the following address:

The Manager, Development Applications Unit (DAU), Government Offices, Newtown Road, Wexford, Y35 AP90

Is mise, le meas



Joanne Lyons
Development Applications Unit
Administration

Nature Conservation Relevant Sources:

ABPmer, (2023). Review of Method Statement, Offshore Wind Ornithology Assessment for East Coast Phase 1 Projects, ABPmer Report No. R.4394. A report produced by ABPmer for An tSeirbhis Páirceanna Náisiúnta agus Fiadhúlra (National Parks and Wildlife Service), November 2023.

APEM (2021). Final Ornithological Monitoring report for London Array Offshore Windfarm – 2021. January 2021.

Brabant, R., Vanermen, N., Stienen, E. W., & Degraer, S. (2015). Towards a cumulative collision risk assessment of local and migrating birds in North Sea offshore wind farms. Hydrobiologia, 756, 63-74.

Brust, V., & Hüppop, O. (2022). Underestimated scale of songbird offshore migration across the south-eastern North Sea during autumn. Journal of Ornithology, 163(1), 51-60.

Burke, B., Fitzgerald, N., Boland, H., Murray, T., Gittings, T., & Tierney, T. D. (2020). Results from the first three years of monitoring post-breeding tern aggregations in Ireland. Irish Birds, 42, 35-44.

Burnell, D., Perkins, A.J., Newton, S.F., Bolton, M., Tierney, T.D. & Dunn, T.E., 2023. Seabirds count: a census of breeding seabirds in Britain and Ireland (2015–2021). Lynx Nature Books, Barcelona.

Fossitt, J. (2000) A Guide to Habitats in Ireland. The Heritage Council.

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

Gochfeld, M. and J. Burger (2020). Roseate Tern (Sterna dougallii), version 1.0. In Birds of the World (S. M. Billerman, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.

Heinänen, S., Zydelis, R., Dorsch, M., Nehls, G., Kleinschmidt, B., Quillfeldt, P. & Morkūnas, J. (2016). Distribution modelling of Red-throated diver based on aerial digital surveys and hydrodynamics. Presentation given at International Workshop on Red-throated Divers, Hamburg, 24-25 November 2016

Heinänen, S., Žydelis, R., Kleinschmidt, B., Dorsch, M., Burger, C., Morkūnas, J., Quillfeldt, P. & Nehls, G. (2020). Satellite telemetry and digital aerial surveys show strong displacement of red-throated divers (Gavia stellata) from offshore wind farms. Marine Environmental Research, 104989

HiDef (2019) Digital video aerial surveys of Common Scoter at Gormanstown: Final report for December 2018 to March 2019. Report produced for Marine Institute

Jessopp, M., Mackey, M., Luck, C., Critchley, E., Bennison, A, and Rogan, E. (2018) The seasonal distribution and abundance of seabirds in the western Irish Sea. Department of Communications, Climate Action and Environment, and National Parks & Wildlife Service, Department of Culture, Heritage & the Gaeltacht, Ireland. 90pp

Johnston, A., Cook, A.S.C.P., Wright, L.J., Humphreys, E.M. and Burton, E.H.K. (2014) Modelling flight heights of marine birds to more accurately assess collision risk with offshore wind turbines. Journal of Applied Ecology 51: 31-41.

Mendel, B., Schwemmer, P., Peschko, V., Müller, S., Schwemmer, H., Mercker, M. & Garthe, S. (2019). Operational offshore wind farms and associated ship traffic cause profound changes in distribution patterns of Loons (Gavia spp.). Journal of Environmental Management, Vol. 231, pp. 429-438

Merne, O.J.M. & Walsh, A., (2005) Breeding Seabirds of The Skelligs, County Kerry. Irish Birds 7:461-474

Murray, T., Walsh, A., & Daly, D. (2020). Post-fledging dispersal of juvenile Sandwich Terns from Lady's Island Lake, County Wexford, Ireland. Ringing & Migration, 35(1), 16-20.

Nagy S and Langendoen T (2018) Report on the Conservation Status of Migratory Waterbirds in the Agreement Area Seventh Edition. Report prepared by Wetlands International

NatureScot (2020) Seasonal Periods for Birds in the Scottish Marine Environment. Short Guidance Note Version 2. October 2020

NatureScot (2023) Guidance Note 8: Guidance to support Offshore Wind Applications: Marine Ornithology Advice for assessing the distributional responses, displacement and barrier effects of Marine birds.

NPWS (2014). Guidance to Manage the Risk to Marine Mammals form Man-made Sound Sources in Irish Waters. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2019a). Birds Directive Article 12 Report. https://www.npws.ie/maps-and-data/habitat-and-species-data/article-12-data

NPWS (2019b). Habitats Directive Article 17 Report.

https://www.npws.ie/publications/article-17-reports

NPWS (2023) Conservation Objectives: North-west Irish Sea SPA 004236. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Perrow, M., Harwood, A., Berridge, R., Burke, B., Newton, S., & Piec, D. (2019). Foraging and chick-provisioning ecology of Roseate Terns breeding at Rockabill. British Birds, 112(9), 496-516.

Peschko, V., Mendel, B., Müller, S., Markones, N., Mercker, M., & Garthe, S. (2020). Effects of offshore windfarms on seabird abundance: strong effects in spring and in the breeding season. Marine Environmental Research, 162, 105157.

Rogan, E., Breen, P., Mackey, M., Cañadas, A., Scheidat, M., Geelhoed, S. & Jessopp, M. (2018). Aerial surveys of cetaceans and seabirds in Irish waters: Occurrence,

distribution and abundance in 2015-2017. Department of Communications, Climate Action & Environment and National Parks and Wildlife Service (NPWS), Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland. 297pp.

Thaxter, C. B., Ross-Smith, V. H., Bouten, W., Clark, N. A., Conway, G. J., Rehfisch, M. M., & Burton, N. H. (2015). Seabird–wind farm interactions during the breeding season vary within and between years: a case study of lesser black-backed gull Larus fuscus in the UK. Biological Conservation, 186, 347-358.

SNCBs (2017), 'Joint SNCB Interim Displacement Advice Note: Advice on how to present assessment information on the extent and potential consequences of seabird displacement from Offshore Wind Farm (OWF) developments'

SNCBs (2022a), 'Joint SNCB Interim Displacement Advice Note: Advice on how to present assessment information on the extent and potential consequences of seabird displacement from Offshore Wind Farm (OWF) developments'

SNCBs (2022b) Joint SNCB1 Interim Advice On The Treatment Of Displacement For Red-Throated Diver (2022)

Vanermen, N., & Stienen, E. (2019). Chapter 8 - Seabirds: displacement. In M. R. Perrow (Ed.), Wildlife and Wind Farms, Conflicts and Solutions. Volume 3. Offshore: Potential Effects. (Vol. 3, pp. 174-205).

Vilela, R., Burger, C., Diederichs, A., Nehls, G., Bachl, F., Szostek, L., Freund, A., Braasch, A., Bellebaum, J., Beckers, B. & Piper, W. (2020) Divers (Gavia spp.) in the German North Sea: Changes in Abundance and Effects of Offshore Wind Farms. A study into diver abundance and distribution based on aerial survey data in the German North Sea. February 2020. Prepared for Bundesverband der Windparkbetreiber Offshore e.V.

Wade, H. M., Masden, E. A., Jackson, A. C., & Furness, R. W. (2016). Incorporating data uncertainty when estimating potential vulnerability of Scottish seabirds to marine renewable energy developments. Marine Policy, 70, 108-113.

Ward, R.M. (2000) Migration patterns and moult of Common Terns Sterna hirundo and Sandwich Terns Sterna sandvicensis using Teesmouth in late summer, Ringing & Migration 20, 19–28.

Wakefield, E.D., Owen, E., Baer, J., Carroll, M.J., Daunt, F., Dodd, S.G., Green, J.A., Guilford, T., Mavor, R.A., Miller, P.I., Newell, M.A., Newton, S.F., Robertson, G.S., Shoji, A., Soanes, L.M., Votier, S.C., Wanless, S. and Bolton, M. (2017), Breeding density, fine-scale tracking, and large-scale modeling reveal the regional distribution of four seabird species. Ecol Appl, 27: 2074-2091. https://doi.org/10.1002/eap.1591

Warwick-Evans, V., Atkinson, P. W., Arnould, J. P. Y., Gauvain, R., Soanes, L., Robinson, L. A., & Green, J. A. (2016). Changes in behaviour drive inter-annual variability in the at-sea distribution of northern gannets. Marine biology, 163, 1-15.

Webb, A., Irwin, C., Mackenzie, M., Scott-Hayward, L., Caneco, B. & Donovan, C. (2017). Lincs Wind Farm: Third Annual Post-Construction Aerial Ornithological Monitoring Report. HiDef Aerial Surveying Ltd report to Lincs Wind Farm Ltd.

Woodward, I.D., Franks, S.E., Bowgen, K., Davies, J.G., Green, R.M.W., Griffin, L.R., Mitchell, C., O'Hanlon, N., Pollock, C., Rees, E.C., Tremlett, C., Wright, L. & Cook, A.S.C.P. (2023) Strategic study of collision risk for birds on migration and further development of the stochastic collision risk modelling tool. Work Package 1: Strategic review of birds on migration in Scottish waters. Report by British Trust for Ornithology, Royal Society for the Protection of Birds and ECO-LG to The Scottish Government, Crown Estate Scotland and The Crown Estate.

Wright, L.J., Ross-Smith, V.H., Massimino, D., Dadam, D., Cook, A.S.C.P. and Burton, N.H.K. (2012) Assessing the risk of offshore wind farm development to migratory birds designated as features of UK Special Protection Areas (and other Annex I species). Strategic Ornithological Support Services. Project SOSS-05. BTO Research Report No. 592.

Zydelis, R., Heinänen, S., Dorsch, M., Nehls, G., Kleinschmidt, B., Quillfeldt, P. & Morkūnas, J. (2016). High mobility of Red-throated Divers revealed by satellite telemetry. Presentation given at International Workshop on Red-throated Divers, Hamburg, 24- 25 November 2016