
ABP-319864-24 Arklow Bank II

From Housing Manager DAU <Manager.DAU@npws.gov.ie>

Date Wed 7/29/2026 1:56 PM

To Marine <marine@pleanala.ie>

 1 attachment (275 KB)

DHLGH ABP-319864-24 Arklow Bank II Further Information .pdf;

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A Chara,

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

Le meas,

Joanne

Joanne Lyons

Higher Executive Officer

Aonad na nIarratas ar Fhorbairt

Development Applications Unit

Ofíóg an Rialtais

Government Offices

Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90

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Your Ref: **ABP-319864-24**
Our Ref: **Off-Off-A240607-0038**
(Please quote in all related correspondence)

29 July 2026

The Secretary
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 offshore wind energy development- Arklow Bank Wind Park 2 Located off the coasts of Co. Wicklow and Co. Wexford
(<https://www.arklowbank2offshoreplanning.ie/>)

A chara

I refer to correspondence received in connection with the above. Outlined below are heritage-related observations/recommendations of the Department under the stated heading(s).

Nature Conservation

1. Ornithology

1.A. Waterbirds and terrestrial bird species

1. A. i. Baseline information (FI ref. 12.F, 12.J, 12.K, 12.R)

It is positive to see that additional monitoring of the movement of migratory waterbird and terrestrial bird species through the proposed array area has been undertaken during an autumn migration period. Nonetheless, the applicant relies heavily on the results from the non-seabird migratory collision risk model (mCRM) to inform the potential impacts of the development on migratory waterbirds, seabirds and terrestrial species. Considering that a number of sensitive bird species, e.g. Merlin and Hen Harrier, were recorded during the land-based vantage points (VPs) and some of these were travelling east, no mention of this is included in the mCRM analysis or NIS.



Review of the Further Information provided by the applicant has resulted in the following additional observations: It is noted that the timing of the additional monitoring did not cover the spring migration period and did not include August for the autumn migration period. The additional information provided did not provide a justification for the selection of the land-based vantage points (VP). Both locations chosen are at the far extremities of the proposed offshore array. Ardmore Point or Mizen Head which are closer to the proposed array site were not included.

The additional information did not provide evidence to demonstrate the efficacy of the passive acoustic monitor (PAM) deployment in combination with the VPs with respect to detection of migratory movements of land birds nearshore and offshore. There is a risk of under-detection of species (based on size for example) with increasing distance from the VP and/or the PAM. Based on the results presented in Table 3-1, most detections were within 1km of the observer from VPs. As the proposed array is >1km offshore, it was not clear if the assumptions with respect to predicted/likely movements within the zone of influence would be valid. It is also not possible to determine the effective detection range for the PAM in these locations.

The PAM recordings took place during potential nocturnal migration periods and no daytime records appear to have been used in the analysis. Considering available evidence from ringing records, (i.e. that many of the terrestrial bird species recorded in the PAM assessment, e.g. Meadow Pipits, migrate to Britain from Ireland primarily during daytime), this survey timing may suggest a gap in the overall analysis. It is possible that such species are potentially travelling through the array area to Wales and England before mainland Europe, rather than travelling down the coasts of Ireland as suggested. Caution should be giving to correlate the direction of species recorded moving north-south during the VPs to those recorded offshore, as no direct link can be made and it is more likely they are travelling east to England/Wales. In addition, the PAM results indicated 66.8% recorded as flying south and 27% flying north. However, this summary does not account for all movement.

The Migratory Bird Survey Methods (March 2026) report notes the use of bird tracking data and highlights its benefits, even if low numbers of individuals from populations are tagged, and the need for a bespoke tagging ORE research programme. Such data would have been very useful to support the assessment. It is also noted that tracking data highlighted in the report, e.g. Whooper Swans, are from Britain travelling northwards. More appropriate examples could have been given, e.g. known migratory routes of Curlew and Woodcock travelling near the proposed development. Other examples of such studies exist for both passerines and waterbirds from tracking studies, ringing records and colour ring projects, e.g. BirdWatch Ireland, BTO, UCC, UCD.

The use of radar (in addition to PAM and VP surveys) would have given significant additional information on the broad movement of birds (and also bats) across the proposed development location. The value of radar in the detection of large migratory movements has advanced with trained altitude exploration models to predict low altitude flights (e.g. Curley



et al. 2025¹). This can provide credible information on peak movement periods and when mitigation measures may be required. This method has effectively been used elsewhere in Europe to identify flight paths, e.g. MIGRALION.

1. A. ii. SPAs and SCIs (FI ref. 12.G, 12.H)

The revised (addendum) screening of terrestrial and waterbirds referring to potential migratory pathways through the proposed array area is welcomed. It is noted that some species for which SPAs are designated, e.g. Curlew, Merlin, Peregrine Falcon, Hen harrier, Greenland White-fronted Geese, Corncrake, have not been included in the final assessment; yet some of these species were recorded offshore during the applicant's surveys. It is noted that these species have known migratory pathways in close proximity to the location of the proposed development.

1. A. iii. Migration assessment tools (FI ref. 12.H, 12.I, 12.K, 12.Q, 12.R)

While the applicant follows the recommended UK guidance on the tools to assess migratory movements, the Further Information provided does not appear to acknowledge the limitations of this tool regarding static metrics, avoidance rates, array width accuracy and species phenology.

- **Static Metrics:** The tool assumes consistent flight speeds and movements across all individuals and does not incorporate natural variability.
- **Avoidance Rates:** The approach typically relies on land-based estimates and single-transit Collision Risk Models (CRM), which may not reflect the complexity of offshore multi-turbine arrays.
- **Array Width Accuracy:** Assessment parameters should incorporate both mean and maximum array width to provide a more robust CRM for migratory corridors.
- **Species included:** Some species that have high potential for collision risk, e.g. Woodcock, Chough, appear to not have been included in the analysis
- **Species Phenology:** For species like the Corncrake, current migratory period estimates (July–August) are likely too narrow given latest available evidence.

1. A. iv. Mitigation measures (FI ref. 12.O)

Limited information is provided on proposed mitigation measures, with reliance on the implementation of a post-construction monitoring regime to address issues arising, rather than minimising potential effects on birds at this stage. Further, recognition of additional

¹ Curley, S. R., Farnsworth, A., White, T. P., Shamoun-Baranes, J., & Dokter, A. M. (2025). *Differences between terrestrial and offshore bird migration: Implications for offshore wind energy*. *Journal of Applied Ecology*, 62(10), 2800-2813. <https://doi.org/10.1111/1365-2664.70158> [pure.uva.nl]



pressures on birds in the marine environment from other sectors (including fishing, recreation, climate change) should be factored into overall assessments of likely displacement and/or disturbance (and including during migration periods) in the cumulative impact assessment.

1.B. Seabirds

1.B. i. Black-legged Kittiwake (FI ref. 12.C)

The applicant has provided additional material in relation to the Wicklow Head SPA Kittiwake population, including an evidence review of displacement, displacement matrices, revised Population Viability Analysis (PVA) outputs using the most recent five years of productivity data, and updated colony monitoring information.

The principal issue arising from the Further Information is whether the additional mortality predicted from the proposed development is compatible with the site-specific conservation objective for Wicklow Head SPA, which is to restore the favourable conservation condition of the Kittiwake population. Collision mortality remains the main source of predicted project-related mortality. Any mortality associated with displacement, should displacement be accepted as an effect, would be additional to that arising from collision.

The revised assessment should therefore be considered primarily in terms of whether the predicted additional mortality would hinder or be contrary to achievement of the conservation objective for the Wicklow Head SPA Kittiwake population. This is particularly relevant given the recent productivity estimates, the uncertainty regarding whether the population is self-sustaining without net immigration, and the reliance placed on density-dependent population regulation within the PVA.

The applicant has provided (12C(i) refers) a detailed evidence review of Kittiwake displacement from offshore wind farms and has supplied the requested displacement matrices using a 30% displacement rate and mortality rates ranging from 1% to 3%. The review considers available guidance, post-construction monitoring evidence and site-specific observations around the existing Arklow Bank Wind Park 1 turbines.

The applicant concludes that there is insufficient scientific justification to assess Kittiwake displacement and has therefore not incorporated the displacement matrices into the revised EIAR or NIS. While this represents a reasoned scientific response to the RFI, the requested precautionary displacement scenario has not formed part of the conclusions of the assessment.

Displacement is not considered to be the principal issue for the Wicklow Head SPA population, as collision mortality represents the main predicted source of project-related mortality. However, should displacement occur, the resulting mortality would be additional to the predicted collision mortality.



As the applicant continues to screen Kittiwake out of the displacement assessment (12C(ii) refers), the requested combined assessment of collision and displacement mortality has not been undertaken. Instead, the revised assessment relies on the conclusion that displacement is not a scientifically supported effect for this species.

The applicant has re-run the PVA (12C(iii) refers) using the most recent five years of productivity data, as requested, and has presented the outputs alongside those based on the longer-term dataset.

The applicant states that use of the lower five-year productivity estimate produces almost identical counterfactual outputs and does not alter the conclusions of the assessment. The specific information requested by An Coimisiún Pleanála has therefore been provided.

However, recent productivity remains below the level previously referenced by the applicant as being associated with population stability. It is therefore unclear how the Wicklow Head SPA population is considered capable of sustaining additional project-related mortality if it is treated as a closed population.

The assessment includes outputs from both density-independent and density-dependent models. The assessment assumes that density-dependent regulation operates at Wicklow Head SPA to offset predicted additional mortality, though empirical evidence supporting this assumption is not provided.

The applicant has clarified (12C(iv) refers) that the PVA does not rely on immigration to offset mortality associated with the proposed development and that the discussion of immigration and emigration between colonies is provided as ecological context. The PVA instead models Wicklow Head SPA as a closed population, which the applicant describes as precautionary.

However, if the Wicklow Head SPA population is assessed as closed, the productivity and survival rates used in the model must be sufficient to maintain the population without net immigration.

The recent five-year productivity estimate is 0.582 fledged young per pair, below the level previously cited by the applicant as being close to that required for population stability. The assessment does not clearly explain how the population is considered self-sustaining under the closed-population assumption while also accommodating additional project-related mortality.

Although exchange between Kittiwake colonies is ecologically likely, the rates of immigration and emigration are unknown. It cannot therefore be assumed that immigration would result in a net population benefit or compensate for project-related mortality.



1.B. ii. Importance of the Arklow Bank area (FI ref. 12.E)

The applicant has acknowledged that Arklow Bank supports comparatively high densities of several seabird species during parts of the year and states that these observations have been incorporated into the quantitative collision risk and displacement assessments. However, the response focuses primarily on explaining why the existing modelling framework is considered sufficient rather than addressing the wider ecological significance of Arklow Bank highlighted by An Coimisiún Pleanála.

The Department considers that Arklow Bank continues to represent an area of particularly high ecological importance for a range of seabird species during the non-breeding period, including gulls, auks and terns. While this does not necessarily alter the quantitative modelling outputs, it provides important ecological context when interpreting the significance of predicted impacts. The importance of Arklow Bank should therefore be recognised not only in terms of the number of birds entered into collision and displacement models, but also as a functionally important seasonal aggregation and foraging area.

The Further Information provided provides some consideration of the potential influence of recently fledged juvenile birds during the post-breeding period, despite this being specifically identified by An Coimisiún Pleanála. Similarly, while the applicant explains why further spatial modelling of prey distributions is not considered feasible, the broader ecological importance of Arklow Bank as an area supporting high concentrations of seabirds is not fully explored.

Notwithstanding that Arklow Bank is not designated as an SPA, evidence indicates that it is of relatively high ornithological importance within the western Irish Sea. It is therefore considered that a proportionate weighting should be given to the exceptional seasonal importance of Arklow Bank when interpreting both collision risk and displacement assessments, particularly for species occurring in high densities during the non-breeding season.

2. Marine Mammals

The Department acknowledges the substantial Further Information submitted by the applicant, including extended Digital Aerial Survey datasets, updated underwater noise modelling, additional vantage point surveys, and expanded mitigation documentation. These additions represent meaningful effort to address earlier data gaps. There are potential areas of outstanding concern as outlined below:

2.A. Pinnipeds

2. A. (i). Abundance and Density Estimates

The applicant's expanded pinniped baseline is welcomed, including the 2025 vantage point surveys and the incorporation of updated telemetry-derived distribution maps (Carter et al., 2020; 2022). These additions improve understanding of pinniped presence and seasonal patterns; it is noted that the applicant bases grey seal population estimates on the Morris



and Duck (2019) summer count data. The UK's Special Committee on Seals (SCOS) explicitly advises caution in this approach. SCOS notes that grey seal summer counts are highly variable, have low statistical power, and do not necessarily reflect abundance during other seasons, including the breeding period. SCOS further highlights regional limitations in the Irish Sea and adjacent waters, where seasonal migration and data gaps can lead to substantial over- or under-estimation of local populations. In this context, the applicant's reliance on August counts as the basis for grey seal density estimation in an impact assessment, and for evaluating risk to a confirmed breeding colony, is not justified. The applicant's own 2025 surveys confirmed this by identifying a grey seal breeding colony at the landfall in September that was not captured by the regional aerial surveys that they rely on for density estimates.

A comprehensive Density Estimate requires the integration of empirical findings of the 2025 landfall surveys (the breeding colony) into a spatially explicit density model. A regional average of 0.08 is considered insufficient when a known concentration of breeding adults and non-mobile pups has been confirmed within 350 m of construction activity. The Commission will need to consider how these issues can align.

2. A. (ii) Potential impacts on pinniped species

The Department acknowledges the applicant's commitment to trenchless cable installation (HDD/Direct Pipe) and the avoidance of intertidal works. This design choice is positive and reduces potential disturbance to hauled-out seals. However, the applicant's conclusion that landfall works will have a negligible impact on the grey seal breeding colony appears scientifically inconsistent with their own construction schedule. The 4.5-day 'punch-out' phase (characterised by continuous 24-hour drilling noise and the concentrated presence of up to seven vessels) is scheduled within a window (October–December) that directly overlaps with the confirmed grey seal pupping season (August–November).

Although the applicant relies on the subterranean nature of the HDD, the punch-out occurs in the nearshore marine environment, 350 m from sensitive breeding coves. Such proximity could result in reduced nursing time, or increased energetic cost of repeated flushing, or risk of pup abandonment. The assessment needs also to address the potential for continuous, round-the-clock noise and vessel activity to cause flushing responses or disrupt the mother-pup bond during this critical life-history stage.

The current assessment concludes impacts are negligible based on the Seal Management Unit (SMU) level, however an assessment of the local colony's viability has not been provided.

Further mitigation measures (e.g. noise abatement, seasonal restrictions, hours of construction) may be needed to minimise impacts on this important seal colony.



2.B. Cetaceans

2.B. (i). Acoustic Monitoring of cetaceans

The applicant's extensive Digital Aerial Surveys (DAS) dataset (2018–2025) is acknowledged and recognises the effort made to collate multiple visual survey sources into a unified baseline. However, as per the Department's original observation, in order to fully characterise the site for all Annex IV cetacean species and fully assess impacts of the proposed development, surveys need to utilise broadband recorders with sensitive hydrophones capable of detecting baleen whales, such as the minke whale. In the Further Information the applicant concludes: *"Acoustic surveys are not deemed necessary as there is already sufficient baseline data available to characterise the baseline environment with regards to marine mammal species, including cetaceans."* The DAS and visual inspection carried out in daylight provide a snapshot in time limited to daylight and surface animals detect specimens at or near the surface, and do not quantify nocturnal or sub-surface activity.

Furthermore, it appears that the applicant has relied upon a 25-day acoustic dataset from 2002 to support their claim they have used Static Acoustic Monitoring (SAM) in conjunction with other methods. The Commission will need to consider whether the age of this dataset presents a valid contemporary baseline for Annex IV species in 2026, especially when compared to the 43-month series of DAS.

Regarding characterisation of minke whales, the applicant acknowledges that minke whales were almost entirely absent from their site-specific DAS, with only one sighting recorded. Despite this lack of site-specific data, they conclude the species has "Low sensitivity" to disturbance and auditory injury. Their rationale relies on the low numbers identified and minke whales having "large size and capacity for energy storage" to tolerate displacement. The Commission will need to consider the sufficiency, of the applicant relying on general physiological assumptions rather than empirical site-specific evidence of how minke whales use the Arklow Bank area.

2.C. Mitigation (comments relevant to both for cetaceans and pinniped)

2. C. (i) Passive Acoustic Monitoring (PAM)

The Department acknowledges the applicant's inclusion of PAM as part of the mitigation suite and recognises the effort to expand monitoring tools beyond visual marine mammal observation (MMO).

The applicant's Marine Mammal Mitigation Plan (MMMP) envisages starting and/or continuing piling in low visibility or at night with PAM as the only real-time detection method, rather than requiring daylight MMO coverage for all starts. The MMMP allows piling in low visibility with PAM as primary detection, contrary to NPWS 2014's guidance. In addition, the limitations of PAM for non-vocal or intermittently vocal species (including seals and some cetaceans) is not adequately considered.



2. C. (ii) Acoustic Deterrent Devices (ADDs)

The applicant's detailed review of ADDs and their inclusion as part of the behavioural mitigation strategy is acknowledged. Empirical studies show variable responses to ADDs, including occasional attraction or habituation. The Commission may need to reflect whether the behavioural assumptions underpinning the impact assessment are sufficiently supported by the information provided in the FI response.

2. C. (iii) Noise abatement systems (NAS)

The Department acknowledges the applicant's detailed explanation of site-specific constraints, including strong tidal currents, and recognises the effort made to evaluate feasibility of bubble curtain systems.

The applicant has adopted the Danish receiver-based underwater noise framework, which relies on behavioural mitigation measures—principally extended ramp-up and acoustic deterrent devices (ADDs)—to keep marine mammals outside the predicted ~1 km permanent threshold shift (PTS) zone, rather than employing source-based noise reduction technologies. While the applicant acknowledges that Noise Abatement Systems (NAS), such as big bubble curtains, can reduce underwater noise by 10–30 dB and shrink disturbance zones for sensitive species like harbour porpoise by up to 90%, it has not committed to their use.

The applicant attributes its decision to site-specific constraints—most notably strong tidal currents at Arklow Bank, which can reach 2.75 m/s and exceed the operational limits of standard bubble curtain systems. The Commission may wish to consider if this justification removes the requirement to demonstrate whether alternative NAS options were feasible or to explain why source-based mitigation was not pursued.

Noise abatement systems reduce sound at source, which is the most effective mitigation according to international best practice and NPWS (2014).

3. Bats

3. a. Baseline information (FI ref. 13.A – 13.J)

Several new detector locations within the zone of influence have recorded bat activity both onshore and offshore including higher number of bat passes during peak migration periods for Leisler's and pipistrelle bat species, including Nathusius's pipistrelle bat. This data highlights the probability that bats are migrating across the Irish Sea at these locations. However, not all key time periods were surveyed with limited data collected for potential spring migration during April. Additionally, a comparison and justification for low activity of the offshore bat passes per day compared to onshore is inappropriate due to different



environmental factors and behavioural differences between foraging and migrating bats. This comparison should not be used to inform the assessment outcome.

The headland survey data supports the offshore detectors with identifying high bat activity during the peak migration periods compared to earlier in the summer. Thus, showing the high level of movement of migratory species in the zone of influence during these periods.

it would be advisable for mitigation measures to be identified, as there is high bat activity shown during key migration periods. These could include curtailment; feathering; turbine colour, etc. and would reduce the risk of collision or barotrauma to migrating bats.

It is noted that the applicant has proposed undertaking long-term monitoring during each phase of the proposed development as part of East Coast Monitoring Group. Details of this plan should be required at least as a condition of planning.

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:

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Is mise, le meas

Julie Sullivan
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